

## B. THE CERCLA PROCESS AT WAG 3

Comment 74 : A Commentor felt that at Page 20, Alternative Development, 1<sup>st</sup> paragraph, if actual technologies are modified after the ROD during remedial design, those modifications must be examined to see if they require an ESD or ROD amendment as described in CERCLA guidance on preparing CERCLA Decision documents. The Public has reviewed and commented on the Plan. Significant modifications after the ROD would diminish, or negate, the public participation process. [C-W]

**Response:** The Commentor is correct. If the alternative is modified or changed following the approval of the ROD, an Explanation of Significant Difference (ESD) or ROD Amendment would be required. Whether an ESD or ROD Amendment would be required depends to the significance of the change. Representative technologies were evaluated in the FS and FSS Reports and then discussed in the Proposed Plan. Some changes to the alternatives were made following the Proposed Plan and subsequent public comment. These changes are discussed in the Section 13 (Documentation of Significant Changes) of this ROD. If it was determined that an ESD was the appropriate level of change to documentation, the ESD would be developed along with a fact sheet to inform the public of the changes. For a significant enough change, a ROD Amendment would be developed along with a Proposed Plan and subsequent public comment period to inform the public of the changes. Neither of these types of changes to the ROD would diminish nor negate public participation.

### B.1. The Comprehensive RI/FS

Comment 75 : A Commentor stated that the Natural Resources Defense Council petition to Nuclear Regulatory Commission July 28, 1998 that legally challenges DOE's attempt to change HLW to "incidental" LLW should be reviewed and considered. [CB-W]

**Response:** Tank Farm source areas are identified with spills of HLW and Sodium Bearing Waste (SBW). However, we are not excavating Tank Farm contaminated soils under this action. There is no need to refine our definitions at this time. Under the Tank Farm RI/FS, the issue of waste classification will be further evaluated. Decisions concerning the waste classification may also be made under the Idaho HLW & FD EIS ROD.

Comment 76 : A Commentor felt that there is information in the WAG 3 RI/BRA document to indicate that there is no provable impact on the perched water from the percolation pond discharges. In fact, the data suggests there is no impact. This information is successfully buried in the 800 or so pages of the document. In addition, the model created for that study has not been field calibrated, regardless of what the author says. It should be done, verified, and peer reviewed before we spend anymore \$\$\$\$ to recycle or build new percolation ponds.

The Commentor also strongly recommend that additional evaluations be done (i.e., tracers put in the ponds and looked for in tank farm wells, increased sampling of tank farm wells to verify a chemical connection). To put it bluntly, there are many within the company who recognize this issue and have questioned the players with no logical resolution. [SA-W]

**Response:** Approximately 70% of the infiltrating water, which contribute to the observed perched water, is from Percolation Pond discharges. The model used for the simulation was calibrated, based on observed field data (e.g., water elevations, chloride, and Sr-90). It is the best information currently available on which to make a reasonably conservative judgement. We believe that our decision process is consistent with national and state guidance. Given the overall uncertainty in transport mechanism at the INTEC facility and the fact that we can control the anthropogenic water, it has been determined that

moving the percolation ponds is certainly “best management” practice. Our position is supported not only by the public, but was supported by an external peer review of the vadose zone program at the INEEL.

Concerning additional work at the Tank Farm, we are in the process of developing a Work Plan for conducting additional studies to better assess fate and transport questions for contaminants at the Tank Farm soils. This investigation will focus on obtaining data to quantify the overall uncertainty in model predictions, concerning Tank Farm soils. Also, we will obtain necessary data required for the purposes of calibrating the transport model in terms of concentrations as the existing model was calibrated to perched water elevations. This additional characterization may use tracers, if appropriate, to help quantify the migration paths of subsurface solutes. In addition, we will monitor vadose zone state variables to determine in-situ moisture flux and direction. However, even these studies will not answer the entire uncertainty issue at the INTEC facility because of the temporal variability in recharge from natural sources such as underflow, overflow, overland flows, rain, snow, and snowmelt.

Comment 77 : A Commentor inquired about the transport assumptions for the vadose zone that were used in the evaluations and modeling. [SRA-W]

**Response:** In conducting the computer modeling for the vadose zone, a number of assumptions were used. The retardation coefficients for the various contaminants were based on default values that have been used for other INEEL evaluations. The vadose zone was assumed to be a homogeneous material with the surface soils, basalt layers, and major interbeds contained within the vertical column. Average (non-varying) properties were used throughout the horizontal and vertical dimensions for the various materials in the vadose zone. Known sources of water, both manmade and natural were also considered in the modeling. A summary discussion of the baseline risk assessment modeling is contained in Section 6 of the RI/BRA Report. The detailed discussion, including modeling parameters and assumptions, for the baseline risk assessment is contained in Appendix F of the RI/BRA Report. The modeling in support of the FS and FSS Reports are contained in Appendix B of each document. The modeling used in the FS and FSS Reports used the same assumptions and approach as used in the RI/BRA Report.

Comment 78 : A Commentor felt that in order to understand the full range of cleanup issues at the Chem Plant, the department should provide a detailed historic description of the operations conducted at the Chem Plant. [SRA2-W]

**Response:** A summary of the operations and activities conducted at INTEC was presented in Section 1 of the RI/BRA Report, which is part of the Administrative Record. This summary information discuss the major activities and operations that were conducted at INTEC. In addition, several of the major facilities were described in this section. For CERCLA investigation and evaluation purposes, this summary level of information was sufficient to conduct evaluations and make decisions.

### **B.1.1 General Comments on the RI/FS**

Comment 79 : A Commentor stated that the entire cleanup plan reeks of “cart before the horse” and that the cleanup plan doesn’t appear to be very technically thought out. [MMS-W-W]

**Response:** The Proposed Plan is a summary of the various remedial investigations and feasibility studies conducted for INTEC. In the evaluation of both risk and remedial alternatives, the information that was collected from the Track 1, Track 2, and OU 3-13 remedial investigation were utilized. Although this information is not perfect, there was sufficient information to conduct the risk evaluations and evaluate remedial action alternatives. As INTEC will continue to operate for many years prior to final closure, remedial alternatives were developed and considered this issue during the evaluations. Most of the relevant information and evaluations can be found in the RI/BRA, FS, and FSS Reports. Additional

information for the release sites at INTEC (ICPP) is contained in the Track 1 and Track 2 documents. All of these documents are contained in the Administrative Record.

**Comment 80** : A Commentor referred to Page 16, SFE-20, 1<sup>st</sup> paragraph in asking that an identification of whether the waste in the tank is a RCRA listed or characteristic waste be provided. The Commentor felt that if the characterization of the waste is not known, a more thorough investigation should be preformed. The Commentor also stated that "the 1984 investigation was not a CERCLA preliminary investigation" and "don't characterize it as such." The Commentor also requested that statements be made concerning whether the vault has leaked and that the site be removed from the Proposed Plan until further characterized. [C-W]

**Response:** The waste in the SFE-20 Tank is not suspected of having listed waste. There may be contaminants in the tank waste that have sufficient concentrations for the waste in the tank to be classified as RCRA characteristic. Further, detailed, characterization of the tank contents is the first activity in the selected remedy (Alternative 4: Removal, Treatment, and Disposal). We agree that the 1984 investigation was not a CERCLA activity. However, data from non-CERCLA investigations is routinely used in the INEEL CERCLA risk assessment and alternative evaluation activities. During the 1984 investigation, there was evidence that water had infiltrated into the vault, which shows that water leaked into the vault and could leak out of the vault. Based on the available information and analysis conducted, there is sufficient information to select a remedy for this site.

**Comment 81** : A Commentor referred to Page 37, Alternative 2B, 2<sup>nd</sup> paragraph concerning the sampling location in the aquifer for the quarterly samples and whether the samples would be diluted with less-contaminated portions of the aquifer above or below that which bears the highest I-129 concentrations. The Commentor stated a fear that the Agencies would take their samples, declare that action levels are met, due to dilution, and then decide that remedial action is not required. The Commentor also wanted to know when the investigation and evaluations would be completed on the aquifer. The Commentor requested that this OU be removed from the ROD pending further investigation and evaluation. [C-W]

**Response:** We disagree with the Commentor. During construction of the monitoring wells, samples will be collected and analyzed from various zones within the aquifer to determine the zone or zones with highest concentrations. Monitoring would continue in the zone or zones with the highest concentrations, which can yield water at a rate of at least 0.5 gpm. An adequate and complete RI/FS was conducted for OU 3-13. The OU 3-13 RI/FS is sufficient to make decisions concerning the contaminated portion of the SRPA outside of the INTEC fenceline. The active remediation portion of the selected remedy (Alternative 2B: Institutional Controls with Monitoring and Contingent Remediation) is only implemented depending on the monitoring results obtained. A Final interim action on the INTEC groundwater plume in the SRPA outside of the INTEC fenceline is included in this ROD. The final action on the INTEC groundwater plume inside the INTEC fenceline will be selected under OU 3-14.

**Comment 82** : A Commentor stated that "Based on the comparisons given in Appendix F of the RI report, the perched water Sr-90 concentrations are over predicted (by the computer model) by factors of 10,000 to 100,000 (it is difficult to tell for sure with the huge log scale used). In addition, the predictions show plutonium concentrations of hundreds of pCi/L in the perched water. This is not supported by the perched water data. Based on these predictions, there is huge uncertainty in the models predicted Sr-90 or plutonium concentrations in the aquifer. Any decisions made based on these predictions are being made under essentially unbounded uncertainty." [JM-W]

**Response:** For certain perched water wells, away from major source terms, large over-predictions in the concentrations for contaminants occur. However, near large source terms, Sr-90 concentration

predictions are within a factor of 10. It is recognized that plutonium is over-predicted based on the available sampling data. Plutonium mobility is one of the major issues to be resolved under the Tank Farm RI/FS (OU 3-14). Predicted concentrations of Sr-90 in the SRPA match the measured concentrations within reasonable limits. Under OU 3-13, an interim action is being undertaken on the SRPA area outside of the INTEC fenceline, with the final action to occur under OU 3-14. Operable Unit 3-14 may attempt to quantify the uncertainty in the modeled concentrations.

**Comment 83** : A Commentor stated that "As shown in the vadose zone model transport calibration and Sr-90 predictions, contaminants are laterally spread much further in the computer model than is supported by the available data. This vadose zone lateral spreading has been assumed to be conservative in that it allows water to spread in the model from the percolation ponds and Big Lost river to the area under the tank farm and accelerate the transport of contaminants from the upper perched water to the aquifer. However, this overestimate of lateral spreading means there is an underestimate of vertical movement of water and contaminants. Therefore, it is possible that the vadose zone contaminant travel time to the aquifer has been underestimated in the model thereby underestimating the future risk in the aquifer (in particular for Sr-90)." [JM-W]

**Response:** The Commentor is correct. It is recognized that the Sr-90 is laterally spread in the model more than is observed in the measured values shown. The true lateral spreading of water is maintaining the saturation front of the subsurface (vadose zone). Minor impacts on the upper perched water zone results from the lateral spreading, but a major impact (effect) is modeled in the deep perched water. The largest source terms are in the Tank Farm Soils (Group 1) and the impacts on the SRPA within the fenceline will be further refined under OU 3-14.

**Comment 84** : A Commentor stated that "The inconsistencies between the computer model predictions (that decisions are based on) and the observed movement of contaminants in the perched water must be clearly acknowledged. The uncertainty in the predicted aquifer risk should be quantified or the results should be qualified in the strongest terms. The risk assessment uncertainty has not been sufficiently stated in this Proposed Plan or in the supporting documentation for the Proposed Plan. [JM-W]

**Response:** There are recognized differences between the modeling and measured results. These differences are shown graphically in Appendix F of the RI/BRA Report, which is part of the Administrative Record. There are predicted impacts on the aquifer from the surface and near surface source terms, but the major impact currently and in the near future is from the use of the injection well. Aquifer impacts from the major source term in the Tank Farm Soils will be refined under the OU 3-14. The Proposed Plan is a summary document. In addition, uncertainty was not quantified in the risk assessment for OU 3-13.

**Comment 85** : A Commentor felt that on Page 14, Perched Water, 2<sup>nd</sup> paragraph a statement should have been made concerning the perched water having been contaminated with RCRA listed waste. A Commentor requested that the specific Idaho Groundwater Quality Standards be identified and that the time frame for impacts on the aquifer be identified. The Commentor also inquired about the evidence that the perched water is a transport pathway between surface soils and the deep aquifer. Also, the Commentor was concerned about the  $K_{ds}$  used for the contaminants absorbed/adsorbed onto surficial soil and layers of soil in the basalt when dealing with infiltrating water. The Commentor requested that a statement be made concerning whether the perched water presents a risk to the aquifer from the contaminants already in the perched water or from additional contaminants leached from soil percolating surface water. [C-W]

**Response:** Given the leaks that have occurred in the Tank Farm, listed hazardous wastes are present in the perched aquifer. Hazardous constituents and characteristic hazardous waste was injected into the

perched water and aquifer through the injection well. Additional information concerning this subject is available in the Administrative Record, specifically Appendix G of the FS Report. The Idaho Groundwater Quality Standards being referred to in the Proposed Plan are the Safe Drinking Water standards applied to the SRPA. The perched water is not a viable source of water for consumption, but does represent a threat to the SRPA. The intent of this remedial action is to restore the SRPA impacted by INTEC operations to usability by 2095 outside of the INTEC fence line. Inside of the INTEC fence line will be addressed under OU 3-14. With water being the mechanism that transports contaminants through both the unsaturated and saturated zones, the perched water is a transport mechanism for the contamination to the SRPA. It is recognized that the INTEC injection well failed and backup into the unsaturated zone. The residual contamination from these failures can not explain the existing contamination in the SRPA without the additional contamination being transported through the perched water and into the SRPA. Default Track 1 and Track 2  $K_d$ s were used for the modeling parameters when dealing with contamination in the surficial sediments and interbed materials. Based on the information contained in the RI/BRA, FS, and FS Supplement Reports, the perched water does represent a threat to the SRPA without remedial action being taken to mitigate the risks.

Comment 86 : A Commentor had a concern about whether the contaminants found in the perc pond water posed a threat. The Commentor also was concerned about the inventory of contaminants in soil/basalt above the perched water. The Commentor had a question concerning the  $K_d$ s used in evaluating the impacts from the perc pond wastewater on the aquifer. Also, the Commentor inquired about which of the contaminant(s) in the soil/basalt are a threat and over what time frame. [C-W]

**Response:** Yes, there are contaminants found in the water being discharged into the existing percolation ponds. However, there are questions concerning the concentrations of the contaminants in the water. Sampling activities are being conducted to resolve the COCs and concentration issues with the water. Recent sampling results indicate that the contamination levels are below the MCLs for the primary contaminants of concern. Tens and thousands of years into the future.

#### **B.1.2. Inclusion of Sites in the RI/FS**

Comment 87 : A Commentor stated that "The Plan notes that the CPP-37 gravel pits and CPP-66 Fly-ash Pit (which both sounds innocuous) will be closed under Idaho Solid Waste Rules (IDAPA 16.01.06). However, the Site Treatment Plan and the Remedial Investigation/Feasibility Study (RI/FS) show the Gravel Pits as a mixed waste discharge site with a volume of 84,393 cubic meters of waste dumped in the two pits. The RI/FS lists seven radionuclides in pit #1 and eight radionuclides in pit #2. The RI/FS lists the Fly-ash Pit with four radionuclides and RCRA listed hazardous waste contaminants. [INEL-95/0056@3-22] Similarly, DOE wants to close the CPP-65 Sewage Lagoon under Idaho Waste Water Land Application Rules, yet the RI/FS lists the site as having contaminants in the lagoon wastewater. [3-22] These waste sites must be remediated under the same RCRA requirements as the other mixed hazardous/radioactive waste sites." [CB-W]

**Response:** Site CPP-65 and CPP-66 are not being addressed under this ROD as we believe that other regulatory programs are better able to address proper closure. A review of the INEEL Site Treatment Plan (STP) was conducted. It was found that these sites are not part of the STP. Both Sites CPP-37a and CPP-37b are being addressed as part of Group 3 (Other Surface Soils) under this ROD. Release Site CPP-66 was transferred to WAG10 for further ecological risk evaluation and remedial action, if necessary. The sewage lagoons (CPP-65) will be closed in accordance with the permit requirements.

Comment 88 : A Commentor felt that "There are a number of sites in this Plan which are not properly characterized." The Commentor stated that these sites should be removed from the Plan and subsequent ROD until characterization is complete. [C-W]

**Response:** We do not understand what sites the Commentor is referring to. All sites were characterized, either from process knowledge, interviews, or actual sampling and analysis. Investigations under the FFA/CO have followed a tiered approach. The approach started with Track 1 investigations along with analysis and then preceded through Track 2 investigations and analysis. These Track 1 and Track 2 investigations were then factored into the RI/FS Work Plan and further investigations were conducted where necessary. Some characterization activities will take place as part of the various remedial actions.

Comment 89 : A Commentor felt that on Page 14, Other Surface Soils, 1<sup>st</sup> paragraph, "Soil which is currently stored in boxes and which was not generated during CERCLA investigation or removal activities (CPP-92), should not be included in this Group." The Commentor stated that "This waste is no different than any other waste generated by the INEEL during routine maintenance or upgrade activities. The INEEL has facilities and dispose of such routine waste. It should not be included in CERCLA simply because it simplifies, and may reduce, regulatory compliance requirements. Including this kind of soil in the CERCLA program allows the INEEL a way to circumvent the RCRA disposal requirements, which might otherwise attach to the soil. Remove boxed soils, which did not originate from the CERCLA program from this Group. [C-W]

**Response:** We disagree with the Commentor. The soils in the Site CPP-92 were included in the FFA/CO through the New Site Identification (NSI) process. In order to add the site to the FFA/CO, concurrence was obtained from both the EPA and Idaho Department of Health and Welfare/Division of Environmental Quality (IDHW/DEQ) along with DOE. Also, the waste that was generated and placed into the boxes originated from CERCLA release sites. Lastly, the boxed soils at Site CPP-92 are subject to HWMA/RCRA ARARs, particularly hazardous waste determinations and land disposal restrictions and storage ARARs. No RCRA requirements were 'circumvented.'

### **B.1.3. Classification of Contaminants**

Comment 90 : A Commentor felt that DOE failed to correctly categorize the other waste as mixed low-level (MLLW) which requires either approved treatment or disposal in a permitted RCRA Subtitle C hazardous waste dump. [CB-W]

**Response:** An evaluation of whether the wastes are subject to RCRA disposal requirements in a RCRA Subtitle C landfill was made in the Feasibility Study Supplement Report, which is part of the Administrative Record.

Comment 91 : A Commentor stated that "Two of the contaminated soil sites (CPP-28 and CPP-79) have transuranic (TRU) elements that cumulatively exceed the TRU definition of 100 nCi/g. This waste must go to a Nuclear Regulatory (NRC)/Environmental Protection Agency (EPA) approved geologic ICDF specifically permitted for TRU waste. Since this contamination resulted from over 100 leaks in the high-level liquid and calcine waste pipes, and acknowledged in DOE's work plan document as HLW, a legitimate case can be made that it still HLW and subject to Nuclear Regulatory Commission disposal regulations." [CB-W]

**Response:** Tank Farm source areas are identified with spills of HLW and SBW. However, we are not excavating Tank Farm contaminated soils under this action. There is no need to refine our definitions at this time. Under the Tank Farm RI/FS, the issue of waste classification will be further evaluated. Decisions concerning the waste classification may also be made under the Idaho HLW & FD EIS ROD. In addition, there were not over 100 releases of waste at INTEC associated with the HLW operations or facilities.

Comment 92 : A Commentor stated that trying to get the Agencies to properly characterize the waste has been an ongoing effort. The Commentor also stated that without proper characterization, disposal of the waste would not meet the basic requirements for disposal. In addition, the Commentor felt that previous disposal activities have been illegal. [CB-TM]

**Response:** An evaluation of whether the wastes are subject to RCRA Subtitle C was made in the FSS, which is part of the Administrative Record. It was determined that there was a significant amount of INEEL CERCLA soils and debris having contaminants other than and in addition to radionuclides. Management of the non-radionuclides is subject to the RCRA requirements. We are unaware of any 'illegal' disposal actions taken under the FFA/CO or under previous RODs. We have characterized contaminated media and wastes to the extent necessary to properly manage them. At Test Area North (TAN) groundwater, when we learned that the waste was a listed hazardous waste, we voluntarily modified the ROD through an ESD to achieve compliance.

Comment 93 : A Commentor felt that the gravel pits were mixed waste based on the site treatment plan and that the waste would need to be dealt with as a RCRA listed waste. The Commentor also felt that the flyash and the sewage lagoons had similar issues and could not be written off as "No Action Sites." In addition, the Commentor stated that further explanation is required in the document. [CB-TM]

**Response:** The gravel pits, flyash pit and sewage lagoons do not appear in the INEEL STP. The STP only deals with waste that has been generated and requires treatment under RCRA for dealing with the hazardous components. These sites are under the CERCLA program and were assessed for risk. Both the human health and ecological risks were determined to be acceptable for the gravel pits and sewage lagoons. Remedial action on the gravel pit will be undertaken in Groups 2 (closed pit) and 3 (open pit). For the flyash pit, the human health risk was determined to be acceptable, but presented a potential ecological risk. This site was transferred to WAG 10 for further ecological risk evaluation and remediation, if necessary. Closure of both the sewage lagoons will occur under other programs. The Proposed Plan is a summary document and does not have the detailed information and rationale. Additional information can be found in the RI/BRA, FS, and FSS along with this ROD.

Comment 94 : A Comment stated that "There are a number of environmental media at ICPP which are known to be contaminated with RCRA listed waste. They include the tank farm perched water system, the aquifer, and several soil wastes. There are other soil wastes that may be contaminated with RCRA listed wastes. It would be a good idea to address these problems through a risk-based delisting in the ROD. By establishing risk-based delisting concentrations in the ROD, then media meeting those concentrations could be managed as non-listed (though they might still exhibit a characteristic of hazardous waste). This would simplify issues of AOC and LDR at the ICDF, if it is built." [C-W]

**Response:** The Commentor is correct. There are areas at INTEC that have been contaminated with waste having listed waste constituents. Delisting of the waste is not being pursued under this ROD. Delisting would not change how the waste is managed on-site. In addition, delisting decisions under the ROD would not apply to off-site shipments.

Comment 95 : A Commentor stated that "None of the SFE-20 Hot Waste Tank System (Group7) (CPP-69) cleanup alternatives offered in the ICPP plan meet regulatory requirements." The Commentor also stated that the classification of the waste in the SFE-20 Hot Waste Tank concerning TRU constituent was not correct. [CB-W]

**Response:** Preliminary information supports that concentrations of TRU may be high enough to require disposal of the Tank's contents at Waste Isolation Pilot Plant (WIPP). However, due to the radiological hazards and access controls, we have not completed characterization of this tank and do not know how

this waste will be classified at this time. As we have elected to excavate and remove the tanks and its contents in full compliance with all applicable regulations, we must disagree with the Commentor concerning our commitment to comply with regulatory requirements.

Comment 96 : A Commentor felt that the waste in the SFE-20 tank system was not adequately characterized. [CB-TM]

**Response:** Preliminary information supports that concentrations of TRU may be high enough to require disposal of the Tank's contents at WIPP. However, due to the radiological hazards and access restrictions, we have not completed characterization of this tank, which would be required even if we elected to leave the tank in place. In addition, because the tank contents have not been completely characterized, whether the contents of the tanks are mixed waste has not been determined. Under evaluation of alternatives, we concluded that Alternative 4 (Removal, Treatment, and Disposal), which includes characterization activities, best satisfies the evaluation criteria. In addition, as we have elected to excavate and remove the tank and its contents in full compliance with all applicable regulations, we must disagree with the Commentor concerning our commitment to comply with regulatory requirements.

Comment 97 : A Commentor felt that the Tank Farm soils are transuranic waste. The Commentor also inquired as to whether additional sampling would be conducted and if it would change the waste classification. The Commentor also stated that if the Tank Farm soils have sufficient concentrations of TRU constituents to be classified as TRU waste the soils would require disposal at a transuranic, deep geologic repository. [CB-TM]

**Response:** Some of the data from sampling activities in the Tank Farm indicate that there may be soils with sufficient concentrations of neptunium (Np), plutonium (Pu), and americium (Am) isotopes to be classified as TRU (i.e., greater than 100 nCi/g). Additional sampling is being planned under the Tank Farm RI/FS (OU 3-14) to determine the concentrations and classifications of the soils. Based on the new and existing information, risks to the environment would be determined and remedial alternatives developed. If the soils are excavated and are classified as TRU, disposal in a deep geological ICDF would be the disposal location. For alternatives that do not excavate (generate waste) the soils, the soils left in place would not be subject to disposal at a deep geological ICDF, but would be required to meet a performance objective considering the impacts on the SRPA and surface receptors.

## **B.2. Risk Assessment**

Comment 98 : A Commentor felt that the definition of clean that the Department of Energy is using is a far cry from what the general public would determine as clean. The Commentor felt that imploding a contaminated building above contaminated soil, and then capping it would not meet most peoples definition of clean as the amount of contamination that was there before the implosion process began, will be there when the capping is completed. [MMS-W-W]

**Response:** The use of 1 in 10,000 is the upper end of the National Contingency Plan risk range. A risk of 1 in 1,000,000 is considered the point of departure for additional consideration concerning risks. In compliance with the NCP, INEEL is using the upper limit in making the risk management decisions concerning the need for remedial action. For the CERCLA program, restoration activities are directed at restoring an area to an acceptable risk. At the INEEL, an acceptable risk has been defined as 1 in 10,000, due to the background contaminant concentrations that represent a  $1 \times 10^{-5}$  risk. Therefore, some contamination remains following the cleanup activities, but the residual is considered acceptable from a risk perspective. There are several alternatives evaluated in the final disposition of facilities, with "imploding" and leaving the building in place being one of the alternatives. Criteria (risk to the SRPA,



risk to surface receptors, worker risk, cost, implementability, etc.) are evaluated in selecting the building disposition alternative. If the environmental risks (aquifer and surface) are in the acceptable range for the alternative, leaving the building in place with the contaminated soil beneath may be a viable alternative. Closure decisions and approaches are within the purview of the HWMA/RCRA closure plans for the interim status unit, not the CERCLA OU 3-13 ROD. Alternatives for consideration in the HWMA/RCRA closure plans are being evaluated in the Idaho HLW & FD EIS. As part of the remedial alternative for the building, an engineered barrier (cap) may be necessary to reduce the risks to acceptable levels. It is true, that for some facility closure, with implosion, that the amount of contaminants remaining will be the amount that was present before facility disposition. This would be considered a viable alternative provided that the SRPA is not adversely impacted. Actions are being taken to reduce impacts to the SRPA to acceptable levels and then all future actions will need to be within the cumulative acceptable risk range.

Comment 99 : A Commentor agreed with the risk assessment approach established, and the specific objectives of the Proposed Plan. [C21-W]

**Response:** Thanks, we appreciate the comment. The risk assessment was prepared in accordance with the EPA national guidance. Standard or default assumptions along with 95% upper confidence concentrations were used to assess the risks. Following the risk assessment, remedial alternatives were developed and evaluated to mitigate and/or reduce the risks to acceptable levels. This information is then summarized into the Proposed Plan along with a recommended (preferred) alternative.

Comment 100 : A Commentor inquired concerning Page 47, Table 10, what the cumulative risk at INTEC would be if all of these sites were included into the calculations. The Commentor stated that "Risk should be calculated across ICPP from all of the CERCLA sites, not just those chosen for inclusion in the Proposed Plan." The Commentor also requested that the cumulative risk from all CERCLA sites at INTEC be stated. [C-W]

**Response:** The cumulative risk at INTEC for the CERCLA release sites was determined to be unacceptable. The baseline risk assessment considered all of the known CERCLA release sites. The release sites presented in Table 10 of the Proposed Plan are release sites that individually do not have an unacceptable risk and do not significantly affect the cumulative risk for CERCLA sites at INTEC. It should be noted that an individual will chronically have exposure to soil at only one location, but that individual will breathe air and drink groundwater that potentially can be affected by contaminants from all of the sites. This results in the risk assessment essentially evaluating the cumulative risk from all of the sites. Section 27 of the RI/BRA Report presents the cumulative risk assessment results.

Comment 101 : A Commentor could not find a section on the uncertainty in the risk assessment, in the Proposed Plan. Particularly, the uncertainty in the groundwater risk predictions and whether the uncertainty can be quantified. The primary source of this uncertainty is the uncertainty in the Sr-90 and plutonium inventory released to the environment, the rate at which the Sr-90 and plutonium is moving from the surface sediments to the underlying basalts, and the transport through the vadose zone to the aquifer. [JM-W]

**Response:** There was no uncertainty discussion in the Proposed Plan. The Proposed Plan is a summary document containing information found in the RI/BRA, FS, and FSS Reports. A qualitative discussion of the uncertainty in the modeling is contained in Section 6 and Appendix F of the RI/BRA Report. Most of the uncertainty in the source terms for Sr-90 and plutonium is in the Tank Farm Soils (Group 1), which will be further investigated and evaluated in the Tank Farm RI/FS (OU 3-14). In addition, the analysis presented in the RI/BRA, FS, and FSS did not attempt to quantify the uncertainty as this would require a considerable additional amount of data and subsequent analysis.

Comment 102 : A Commentor questioned whether some sites in this Plan present a real risk to human health/environment. If they don't, they should be removed from the Plan or a viable risk should be demonstrated. [C-W]

**Response:** We are not sure which sites the Commentor refers to. Release sites without an unacceptable risk were recommended for "No Action" or "No Future Action" depending on the condition of the source term for the release site.

Comment 103 : A Commentor wondered, since the proposed ICDF will be outside the 100-year floodplain and thus will be acceptable under both RCRA and TSCA, how long will the radioactive portion of the waste present a risk to the environment? DOE Order 5820.2A requires a risk assessment for the radionuclide portion of the waste. What are the results of this risk assessment? [C-W]

**Response:** In the evaluation of the materials for potential disposal in the ICDF, some waste could remain sufficiently radioactive to present an unacceptable risk to human health receptors for approximately 800 years. This information is presented in the RI/BRA, FS, and FSS Reports. In addition, the ICDF will be designed, constructed, operated, and closed to not adversely impact the SRPA or surface receptors. Additional risk analysis will be conducted under remedial design activities. The specific WAC will be developed with agency concurrence during remedial design.

#### **B.2.1. Human Health Risk Assessment**

Comment 104 : A Commentor was concerned that DOE is not using "maximum" contaminant data. For instance, the Snake River Aquifer risk assessment -90 levels used by DOE is 8.1 yet DOE's own sampling data in the RI/FS shows 14 aquifer monitoring wells that exceed the MCL including USGS-047 with Sr-90 levels over 60 pCi/L. [INEL-95/0056; D-19] DOE additionally fails to acknowledge aquifer tritium contamination in excess of the MCLs. DOE's use of arbitrarily low or averaged sample data results in unreliable and non-conservative risk assessments. [CB-W]

**Response:** There are a number of aquifer wells near the INTEC facility that currently measure concentrations of radionuclides exceeding the MCLs. In assessing the risk to a hypothetical future resident, the maximum contaminant concentrations predicted by the computer modeling were used. The MCL for radionuclides, beta and gamma emitters is 4mrem/yr from all sources. The MCLs listed are calculated as if they were the only radionuclide present. Tritium, Sr-90 and I-129 all exceed MCLs today. However, the reasonable timeframe that we would expect before the aquifer may serve as a drinking water source in the vicinity of the ICPP by future residential users is year 2095. MCLs for this year 2095 future use scenario, are modeled to be within acceptable levels for all but Iodine-129 and Sr-90. The 8.1 pCi/L Sr-90 referred to by the Commentor is the predicted value, rather than a measured value.

Comment 105 : A Commentor thought the Proposed Plan for the clean up for the contaminated soils in the groundwater appeared to be well done under the overall conservative assumptions in the regulations by which they have to abide. The major concern was with the estimate and the calculations, in that overly conservative values have been used due to using a linear- and no-threshold approach, which has been shown to be incorrect.

The Commentor pointed to recent scientific values of at least 5 rem -- and there are actually two more recent values of 10 and 20 rem that have been reported instead of the 15 mR would lead to much lower cost figures for accomplishing a cleanup. Therefore, they felt that either these higher figures should be used, or at least evaluated as an alternative cost estimate basis. [LJ-TI]

**Response:** Although this issue is controversial, we must conclude that based on the limited data concerning low dose epidemiological studies, the epidemiological data base is of very limited value in assessing dose response relationships. Based on the assessment of our experts and others, no alternate-dose response relationship appears to be more plausible than the linear non-threshold model on the basis of present scientific knowledge. For radiation protection purposes, the weight of evidence causes us to continue to conclude that the risk from radiation increases linearly with the dose, in the low dose range above natural background radiation levels.

Comment 106 : The measure of acceptable risk to human health as being 1 in 10,000 is very conservative. However, we can accept that criterion if the risk assessment is done in an acceptable science-based manner. Our major concern is that the risk assessment values calculated in this plan are based upon a nonscientific hypothesis. All risk calculations are based on the "linear-no-threshold" hypothesis, which links risks of cancer to radiation doses down to zero. There is no scientific evidence to support this theory. In fact the Council of Scientific Society Presidents has stated that radiation levels below 10 rem per year are not clearly linked to an increased risk of cancer for adults. Therefore following recommendations are offered on the Proposed Plan. [C21-W]

**Response:** The use of 1 in 10,000 is the upper end of the NCP risk range. A risk of 1 in 1,000,000 is considered the point of departure. The INEEL is using the upper limit in making the risk management decisions concerning the need for remedial action.

Although this issue is controversial, we must conclude that based on the limited data concerning low dose epidemiological studies, the epidemiological data base is of very limited value in assessing dose response relationships. Based on the assessment of our experts and others, no alternate-dose response relationship appears to be more plausible than the linear non-threshold model on the basis of present scientific knowledge. For radiation protection purposes, the weight of evidence causes us to continue to conclude that the risk from radiation increases linearly with the dose, in the low dose range above natural background radiation levels.

Comment 107 : A group of Commentors recommend that risk calculations be done based upon more scientific criteria. For example: Take the Federal Limit on Public Radiation Exposure from the NRC General Public Limit of 0.1 rem/yr as the baseline or threshold for zero risk of cancer for the public. Take the Federal Limit on Worker Radiation Exposure of 5.0 rem/yr as the baseline for zero risk of cancer to a worker. [C21-W]

**Response:** Within the EPA regulations, a dose of 15 mRem/yr is considered the maximum allowable exposure for the general population. This dose roughly corresponds a risk of 3 in 10,000. Because there currently is not a better theory on radiation dose effect than the linear-no-threshold hypothesis, risks are calculated with zero risk at zero dose. A dose of 0.1 rem/yr (100 mRem/yr) would correspond to a risk of 7 in 10,000 and a dose of 5.0 rem/yr (5,000 mRem/yr) would correspond to a risk of 3 in 100. Both of these doses are considerably over the EPA standard and would be considered an unacceptable risk. In addition, the EPA is considered the primary organization responsible for determining risks to human health and the environment.

Comment 108 : Regarding the human health risk assessment portion of the Proposed Plan, page 17, a Commentor questioned, "what happened to the future resident beyond 2095? [C-W]

**Response:** We are sorry for the confusion. The risks to workers both current and future (2095 and beyond) were analyzed in addition to the future resident (2095 and beyond). There were not any release sites that had an unacceptable risk to workers, either current or future, that did not also have an unacceptable risk to the future resident. Based on this, the need to take remedial action for release sites

was specified using the future resident. It should be noted that for all land use scenarios (current and future worker along with future resident) an unacceptable risk was defined as 1 in 10,000. Also, workers are additionally protected with worker controls that were not taken into account in assessing the risks.

Comment 109 : A Commentor stated, "but you promise to clean it up. And if I haven't died from trace exposure to atomic waste in my aquifer I just may live to see it. [RK-W]

**Response:** The CERCLA program is committed to cleaning up the contaminated areas at the INEEL, including contaminated soils. This ROD has selected remedial actions to remediate various areas located at INTEC. The risk numbers calculated by CERCLA methods are the probability that an exposure will lead to a tumor. The exposure is calculated based on a number of factors resulting in a chronic dose. This chronic dose is evaluated as being received over many years (30 years for residential scenario). Even if the exposure results in a tumor, the tumor will not necessarily lead to a fatal cancer. No off-site impacts from the INEEL that result in unacceptable risk to the public were discovered by the OU 3-13 RI/FS.

### **B.2.2. Ecological Risk Assessment**

Comment 110 : A Commentor wanted to know how the Agencies propose to address ecological risks such that species ranging the entire INEEL will be protected. [C-W]

**Response:** For the ecological risk evaluation (screening level risk analysis) conducted at WAG 3 or INTEC, evaluations were done on an individual release site basis. These ecological risk evaluations used both actual uptake factors and hypothetical uptakes (based on similar species) for ecological receptors. These ecological risk evaluations resulted in some sites having a potential ecological impact. Release sites without a potential ecological impact were eliminated from ecological concerns. Many sites at WAG 3 had a potential ecological risk at the same release site as an unacceptable human health risk. For release sites having both an unacceptable human health and potential ecological risk, the remediation of the site to human health standards will also be designed to address the potential ecological risk issues. Some sites had a potential ecological risk without an unacceptable human health risk. For these sites, the remediation levels are designed to reduce the contamination to levels below the concentrations resulting in a potentially unacceptable ecological risk. One site, CPP-66: Fly Ash Pit, is being deferred to WAG 10 to address the potential ecological risk impacts from the release site. In addition, a final INEEL-wide ecological risk assessment, including the impacts on populations, will be conducted under the WAG 10 RI/FS.

Comment 111 : A Commentor stated the ecological risk assessment method and results are misrepresented and this section needs to be clarified. For example, the first step of the ERA process is a background and EBSL screening, however an additional (much less conservative) assessment is then performed on those sites that are not eliminated by this screen. This information needs to be included or the paragraph rewritten, since currently it gives the impression that the preliminary screen is the only step performed. More importantly is the inclusion of an appropriate discussion concerning the additional site and contaminate elimination step requested by the DOE-ID, EPA, and IDHW. Based on the results of the ERA, those sites that had hazard quotients (HQs) greater than 1.0 (27 sites) were eliminated as a concern by the risk managers if the soil concentrations (at the 95% UCL or max [which ever was lower]) was less than 10X background or if the HQ was less than 10. This eliminated all but 16 sites of the 27 sites (as well as multiple contaminants). Of these 16 sites, 4 were solely an ecological risk. This needs to be more clearly stated in the text since it gives the impression that of the 27 sites, 4 were solely an ecological risk and this is not the case. The statement that the remaining 64 sites do not pose risk to ecological receptors should be rewritten to state that the remaining 64 sites were eliminated as a concern to ecological

receptors by the risk assessment process. Due to the uncertainty in the risk assessment process (also true of human health) it is not responsible to state that “no risk” (implying zero risk) is posed. [RV-W]

**Response:** No changes were made to the final Proposed Plan to address this issue. The ecological risk evaluation in this ROD was written and expanded upon the Proposed Plan to address this comment.

### **B.3. Remedial Action Objectives**

Comment 112 : A Commentor was concerned that the RAO of  $2\text{E-}4$  is consistent neither with NCP nor the statement on page 17 of this Plan which states that: “...total excess risk may not exceed one in 10,000.” achieved by adding the risks from groundwater and soil. The RAO should be to reduce the risk at the site, from all pathways to acceptable levels. In addition, CERCLA identifies  $1\text{E-}4$  as the point at which remediation is required, not the point at which it stops. Ideally remediation, once begun, should reduce risk to as close to  $1\text{E-}6$  as is possible within the CERCLA decision making criteria. Strongly suggest the RAO be modified to comply with the NCP. [C-W]

**Response:** The NCP defines the acceptable risk range as  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ . The RAO is to reduce the risk from all pathways to within this risk range for the residential scenario. Due to the fact that the risk from background radiation at the INEEL is approximately  $1 \times 10^{-5}$ , it has been determined appropriate to remediate to the upper end of the NCP risk range. In addition, this RAO is using a residential scenario for the INTEC, which is a conservative assumption.

Comment 113 : A Commentor felt it is not a reasonable presumption that a person might build a house inside the current, ICPP fence, but drill a drinking water well outside the current fence. Thus establishing RAOs for the groundwater outside the fence only while allowing people to live within the fence is not acceptable or consistent. Choose - where will people live and get drinking water, inside or outside the fence? Be consistent!! If this results in different, less aggressive, remedial actions inside the fence, that is acceptable, just make it clear to the public. [C-W]

**Response:** The Commentor is correct. There is an apparent inconsistency in the approach for groundwater discussed in the Proposed Plan. Due to this inconsistency issue, the remedy for the SRPA has been changed to an interim action the area outside of the INTEC fenceline. The final action on the SRPA, including the area inside the INTEC fenceline, will be evaluated and the decision made under the OU 3-14 RI/FS project.

Comment 114 : Reserved.

**Response:**

Comment 115 : A Commentor questioned whether the proposed 100 year RAO will adequately protect the future value of regional groundwater resources and the economic activities they support. [L-W]

**Response:** The remedial action objective (RAO) of year 2095 is based on our prediction that government control of INEEL may end and uncontrolled development may occur unless we commit to additional remedial controls. This scenario is used in our risk assessment process rather than assume that we will maintain all of INEEL as a government facility in perpetuity. Areas like the ICDF will have these remedial controls placed on the ICDF area. It will be designed, constructed and maintained as long as the threat to human health and the environment persists. These controls will include periodic reviews that the remedy remains protective, land use restrictions, cap maintenance and other tangible physical controls as

necessary. Our commitment to the SRPA is that it be restored by the year 2095 so that it is available for use in the future economic development of the area.

Comment 116 : A Commentor questioned whether the goals of the current plan were: 1) that the Chem Plant be clean enough for people to live there by 2095; 2) and that the contamination levels then in the Snake River Aquifer be low enough for people to get water nearby? [SRA-W]

**Response:** The Commentor is correct. Our goal is to restore soil areas where excavation will take place and the underlying aquifer so that future users will not be at an unacceptable risk. The ICDF and other capped soil areas will be maintained so as to prevent future access. Also, there are areas at INTEC that will not be clean enough for people to live or work unrestricted by 2095. For these areas, engineering and institutional controls will continue to be maintained until the risk is acceptable.

Comment 117 : A Commentor asked why the proposed MCL for I-129 is approximately 20 pCi/L or more than 4 times the computer model predicted peak I-129 concentrations after year 2095. The Commentor recognized that 20 pCi/L was not the legal standard but was of the understanding it is the current scientific standard. The Commentor wanted clarification to the public that the proposed groundwater remedial action is based on groundwater action level concentrations that are significantly below the MCL supported by the scientific community. The Commentor noted the EPA proposed the MCL of 20 pCi/L been recognized by the U.S. Government's own scientist as more appropriate than the 25 to 30 year old legal standard of 1 pCi/L. [JM-W]

**Response:** The Commentor is incorrect. At one time, a method for calculation of the MCLs resulting in the I-129 MCL of 20 pCi/L was proposed. This approach was **not promulgated**. New proposed MCLs have been proposed by the EPA and the proposal includes a MCL for I-129 MCL of 1 pCi/L. These new standards are expected to become effective by November 2000. In addition, the I-129 MCL of 1 pCi/L is derived from the 4 mRem/yr dose MCL under the Safe Drinking Water Act.

#### **B.4. Compliance with ARARs**

Comment 118 : A Commentor was concerned that the Agencies have been vague about the definition of AOC for WAG 3 and other WAGs. The "AOC" has varied, depending on what was "convenient" at the time. As an example, refer to the removal action conducted for the electrical system upgrade. For that removal action, the AOC was defined very strictly around each OU. Now the Agencies want to make it much broader. This is not consistent. Also, the area proposed for the ICDF cannot be part of the AOC since it is not part of "continuous or contiguous" contamination associated with WAG 3. The ICDF cannot be considered part of the WAG 3 AOC. [C-W]

**Response:** The definition of the AOC is consistent with being within the "continuous or contiguous" area of contamination at INTEC. Release Site CPP-95 (ICPP Windblown Plume) has a contaminated area extending both south and north of INTEC. The areal extent of CPP-95 used in establishing the AOC is the area that is not available for free release or unrestricted use due to the existing contamination. Existing institutional controls (access restrictions, land use restrictions, and radiological monitoring) must remain in place until 2095 for the site to become available for free release or unrestricted use. Based on the restriction on the land use for CPP-95 and that the other sites in WAG 3 requiring remediation are within the areal extent of CPP-95, the restricted portion of CPP-95 is defined as the AOC. The areal extent of the AOC is presented with Figure 2-1 for Appendix C of the FSS Report. This is a large area of continuous or contiguous contamination and includes the location of the ICDF. Removal actions do not have the ability to establish an AOC outside of the scope of the project and are generally conducted on limited scope or area. This ROD is making decisions for all of the known release sites at INTEC and is determining the WAG 3 AOC.

Comment 119 : A Commentor wanted to know what kind of air emission controls will be in place during Chem Plant cleanup, particularly soil movement? [SRA-W]

**Response:** Various controls and actions will be used during the remedial actions to control air emissions. These controls and actions, such as dust suppression, will be applied to all remedial actions, including soil movement as appropriate and necessary. Also, short term risk concerns for workers, the community, and the environment will be further addressed at part of the remedial design and cleanup activities to ensure protectiveness.

Comment 120 : A Commentor noted perched water under ICPP is considered to be “waters of the state” and is covered by Idaho Water Quality Standards, ARARs for this OU. Alternative 2 does very little to actively pursue compliance with these requirements, these ARARs. Please do not boldly state that Alternative 2 meets all of the ARARs. It does not. The Agencies are lying to the public again. [C-W]

**Response:** The selected remedy for Group 4 (Perched Water) consists of reducing recharge to the perching zones. This remedy will ensure that in the future, insufficient quantities of water in the contaminated zones are available for drinking water purposes. During the drainout period, the perched zones will be institutionally controlled to ensure the perched water is not utilized for drinking water purposes. Additionally, this remedy will reduce the flux of surface contamination to the regional aquifer. Since much of the contaminant mass in the vadose zone at INTEC is adsorbed to sedimentary material, rather than soluble in the perched water itself, actively pumping and treating these perched zones offers little additional long-term benefit, at significantly increased expense. This issue was openly discussed during the public meetings for cleanup of OU 3-13. The selected remedy is consistent with the provisions of the Idaho Groundwater Quality Rule and meets ARARs.

Comment 121 : A Commentor noted, regardless of the alternatives selected, clean-up activities must be done in compliance with all mandated requirements. Most of the activities involved in WAG 3 are located within previously disturbed areas within the fenced area of INTEC. Historic structures are present within the study area, and a complete assessment of effect will need to be completed. This is required under Section 106 of the National Historic Preservation Act,(36 CFR 800.2(o)(1)) [SBT-W]

**Response:** Compliance with Section 106 will be achieved as will compliance with all applicable or relevant and appropriate requirements.

Comment 122 : A Commentor pointed out that groups 1, 3, 6, and 7 include preferred alternatives which require surface-water control, and/or soil excavation. These actions may disturb cultural resources during excavation. In that case, all work must halt if buried cultural resources are encountered, and notification made to the LIMITCO Cultural Resources Staff so that they can work with the Tribes in assessing the resources, mitigating the damages as necessary, and authorizing continuance of excavation. Group 2, Soils Under Buildings: The D&D of all buildings must be done in compliance with Section 106 of the Historic Preservation Act, as stated above. Soils from the borrow area need to be closely monitored to insure that cultural deposits are not inadvertently introduced into the construction area. If deposits are found, a stop-work policy should be put into place and notification made to the proper technical groups as outlined in the Agreement in Principle (AIP) between the Shoshone Bannock Tribes and the DOE. For Groups 3, 4, and 5: selection and construction of the disposal areas will need to be carefully considered. The areas will need to be surveyed for cultural resources that may be present, which would require substantial testing. This is especially true if the Big Lost River is diverted or lined because of the historical importance of the river to the Tribes. [SBT-W]

**Response:** Performing an archeological survey prior to any site disturbance is a long practiced requirement at INEEL. If cultural resources are encountered, work will be halted or moved from the affected location until proper precautions can be taken to protect invaluable cultural resources.

Comment 123 : A Commentor noted that because of the proposed use, the facilities will be very long term. The effect to cultural resources, in the event they are present in the area, would also be long term. Many of these resources are a non-renewable testament to the Shoshone-Bannock history, or are resources that still have considerable importance to the Tribes. After the areas have been closely inspected prior to construction, close monitoring during construction will be required to insure that cultural resources are not damaged or destroyed. Mitigation of damage to cultural resource sites will need to be coordinated with the Shoshone Bannock Tribes and contractors as outlined in the AIP. [SBT-W]

**Response:** Performing an archeological survey prior to any site disturbance is a long practiced requirement at INEEL. If cultural resources are encountered, work will be halted or moved from the affected location until proper precautions can be taken to protect invaluable cultural resources. The location of the ICDF is in a partially disturbed area. The Group 3 soils are in already disturbed areas. Also, both of these areas are within the existing archeological survey zones. This will help to minimize cultural resource impacts.

Comment 124 : A Commentor noted that where the preferred alternative calls for the removal, storage and treatment of contaminated water, it should be kept in mind that this action might indirectly affect cultural resources. The full scope treatment and storage plan will need to be reviewed and commented on. The feasibility of cleaning up water resources will need to be demonstrated, and assurances given that the process of cleaning up perched and aquifer waters will not cause more problems and contamination than currently exist. [SBT-W]

**Response:** If necessary to restore the aquifer to drinking water quality, the groundwater extraction and treatment system will be sited so as to minimize the impact to cultural resources. Implementation of the contingency action for aquifer cleanup, will only be in response to clear evidence that: (1) extraction and treatment is necessary to meet the aquifer restoration timeframe; and (2) treatment technology can cost-effectively remove the hazardous contaminant (i.e., I-129) from the groundwater. Disposal of the treated groundwater will also be such as to minimize the impact on cultural resources and comply with ARARs.

Comment 125 : A Commentor suggested reasons against siting a new disposal site at the Chem Plant is found in the NRC's 10 CFR Part 61 regulations for land disposal of radioactive waste, which should be included with other Applicable or Relevant and Appropriate ("ARARs"). RCRA subtitle C requirements do not apply to LLW Under Part 61, "The primary emphasis in disposal site suitability is given to isolation of wastes, a matter having long-term impacts, and to disposal site features that the long-term performance objectives of Subpart C of this part are met, as opposed to short-term convenience or benefits 10 CFR 61.50(a). This same primary emphasis appears in the joint NRC-EPA siting guidelines. NRC's regulations go on to note that "*The disposal site must be designed to complement and improve, where appropriate, the ability, of the site's characteristics to assure that the performance objectives of Subpart C of this part will meet 10 CFR 61.51(a)(4).*" [L-W]

**Response:** The Commentor is correct. RCRA Subtitle C requirements do not apply to disposal of LLW. However, the design criteria for a RCRA Subtitle C disposal facility are more conservative and prescriptive. DOE Order 435.1 was added as a To Be Considered (TBC) ARAR to deal with the LLW issue. In addition, the Commentor apparently cited an incorrect section of the Code of Federal Regulations (CFR). The correct citation is 10 CFR 61.51(a)(3).



Comment 126 : A Commentor felt that the ICDF is a transparent attempt by the Agencies to avoid treating mixed waste to LDR standards prior to disposal. Please describe how a groundwater monitoring system would be designed to detect releases from the ICDF when the “background” concentrations of contaminants is already high? Where would the upgradient “clean” well(s) be located? Where would the downgradient wells be located so that on contamination from the ICDF would be detected? [C-W]

**Response:** The ICDF is not an attempt to avoid treating and appropriately disposing of mixed and other hazardous wastes. INEEL CERCLA waste (soil and debris) from within the AOC would not necessarily require treatment prior to disposal. The in-AOC waste would be required to meet the acceptance criteria for the ICDF. If treatment is necessary for in-AOC waste to meet the acceptance criteria (stabilization for subsidence or leaching control), the waste would be treated prior to disposal. INEEL CERCLA waste from outside the AOC, would be required to meet the requirements of Phase IV of the Land Disposal Restrictions (LDRs) regulations. For OU 3-13 soils and debris, which have triggered placement, treatment to the Phase IV LDRs will be required prior to disposal in the ICDF. The monitoring network for ICDF will be designed and evaluated during the development of the remedial design. In addition, the monitoring network will be designed to detect releases from the ICDF. Wastes to be disposed of in the ICDF would be pre-treated as necessary to minimize leachate generation in the ICDF landfill environment. The LDR restrictions were enacted to assure that wastes disposed in landfills not leach and contaminate the underlying aquifer. The WAC and pre-treatment requirements required for the ICDF will achieve this goal.

Comment 127 : A Commentor wanted it made clear to the public, that if the ICDF is determined to be within the WAG 3 AOC, that RCRA hazardous waste may be placed into the facility without treatment to meet LDRs. [C-W]

**Response:** We agree. Discussion is contained in the ROD that states WAG 3 CERCLA wastes, which are consolidated within the AOC, will not be required to meet LDRs. INEEL CERCLA waste material from outside of the AOC will be required to meet the Phase IV LDRs. In addition, only waste from INEEL CERCLA remedial or removal projects will be considered for disposal in the ICDF and these wastes will be required to meet the acceptance criteria.

## **B.5. Development of Alternatives**

Comment 128 : A Commentor felt that it does not make sense to dig up contaminated materials and bury them somewhere else.[TW-W]

**Response:** The goal of the OU 3-13 project is to reduce the risk posed by the OU 3-13 sites to acceptable levels. Leaving wastes in place would require perpetual long term monitoring and maintenance. Removal of the contaminated soil and debris will result in being able to use the area for other future purposes. Removal of the contamination and appropriate disposal will result in a larger reduction in risk than leaving the waste in place. Based on this we concluded that removal and disposal of contamination best satisfied the evaluation criteria.

Comment 129 : A Commentor felt that under “Alternative Development Evaluation and Recommendations”, the alternatives and costs are meaningless without quantitative information on the risk reduction that will result from implementing the action. What are the taxpayers buying with this money? In all the gray cost margin boxes, please include the estimated risk reduction information next to the cost of the alternative. The risk reduction information should include both the initial estimated risk and the estimated risk after implementation of the alternative. It is absolutely impossible to make an informed decision on which alternative is most appropriate without knowing the predicted risk reduction. [JM-W]

**Response:** The alternatives in the FS and FSS Reports were developed and evaluated to reduce the risks to acceptable levels. Alternatives were not developed to reduce the risks to different levels below and including acceptable levels given the existing background contaminant concentration alternatives were not developed. All of the alternatives selected in this ROD will reduce the risk to acceptable levels. A quantitative risk reduction analysis would be useful if cleanups were being considered at different levels or points of compliance.

## **B.6. Implementation of Alternatives**

Comment 130 : A Commentor recommended that for Group 2 the contaminated dirt should be left in place. The Commentor thought this is logical, but in other instances, such as VES-SFE-20, you intend to perform total removal. This is not consistent. If you can indeed leave Group 2 soil in place, it follows that you should be able to leave VES-SFE-20 and other contamination in place. [TW-W]

**Response:** Group 2 represents a unique problem for managing contaminated soils at INEEL. These areas are still in operation and located under structures. We could have chosen to wait several decades for the determinations to be made on the above ground structures. However, we have elected to establish a performance standard at this time. The end state of these contaminated soils will be to provide sufficient protection to the underlying groundwater and future site users. As for the SFE-20 Tank System, the most cost effective and risk reducing alternative is Alternative 4. Based on this we concluded that Alternative 4 (Removal, Treatment, and Disposal), best satisfied the evaluation criteria.

Comment 131 : A Commentor wondered, how long are engineered barriers assumed to last? The engineered barrier for the soil under buildings will be designed to last 1,000 years, but how does that relate to the length of time residual contamination will pose a hazard? [SRA-W]

**Response:** The design life of engineered barriers is based on the material used in the construction. The contaminants at INTEC will present an unacceptable risk for a significant period of time (beyond 2095). Based on this, the engineered barriers will be constructed using native or natural materials having useful properties in the geological timeframes (1,000+ years). For most of the radioactive contaminants expected to be disposed in the ICDF, a 1,000-year design will result in greater than one millionfold decrease from the initial concentration, due to radioactive decay. For non-radioactive metal contaminants, these will remain hazardous indefinitely. Contaminants will not be placed in the landfill which have a high potential to leach to groundwater. Cap maintenance to prevent future intrusion will continue as long as an unacceptable risk remains. The engineered barriers (caps) will be designed to remain effective to at least the amount of time that the contamination present would present an unacceptable risk.

Comment 132 : A Commentor asked, "will any of the caps or covers proposed for the Chem Plant require maintenance? Please describe this effort fully." [SRA-W]

**Response:** Yes, there will be monitoring and maintenance activities for the engineered barriers (caps) following the construction activities. A strong post-closure monitoring and maintenance program is required to insure that any landfill contains the disposed wastes. The final cover will be designed to minimize maintenance needs. Requirements for the monitoring and maintenance plans will be developed as part of the remedial design process.

### **B.6.1. Environmental Monitoring**

Comment 133 : A Commentor wondered, since the preferred Alternative 2 calls for continuing existing environmental monitoring. What monitoring is currently underway? I know of no groundwater monitoring, in particular, which is intended, or capable, of detecting releases from any particular unit. How will the lack of such monitoring be deemed protective of human health and the environment? This Alternative is a “feel good” alternative because it makes the public feel good - because they don't know enough to realize they've been hoodwinked again. This alternative, as worded, is not acceptable. [C-W]

**Response:** Environmental monitoring for Group 2 soils where the hazard is based on surface exposure is a periodic evaluation of what exposures workers and the public are exposed to in and around the Group 2 buildings. A detailed post-ROD monitoring plan will be developed during remedial design/remedial action.

Comment 134 : A Commentor stated that “Most of the Alternative include continued “environmental monitoring.” The fact is few, if any, of these sites are currently subject to site-specific environmental monitoring. Your portrayal that they are is misleading, at best, and a damned lie, at worst. The INEEL cannot detect contaminant releases from any specific site, and would be lucky to detect additional releases from the ICPP as a whole.” [C-W]

**Response:** Discussion of the proposed type of environmental monitoring for the various remedial action groups is included within this ROD. We recognize the difficulty in detecting releases at INTEC. A monitoring plan is being developed to conduct the long-term monitoring at INTEC. This monitoring plan will address the issue of releases from specific locations at INTEC.

Comment 135 : A Commentor when referring to Page 43, Alternative 1 stated that “There is no site-specific environmental monitoring, to my knowledge, at this site. Don't state there is; it's a lie.” [C-W]

**Response:** The environmental monitoring referred to for this non-selected alternative would have consisted of monitoring the perched water wells in the immediate area. In addition, two additional monitoring wells clusters would have been constructed next the SFE-20 Tank System and monitored to identify releases.

Comment 136 : A Commentor was unsure what the Proposed Plan meant in the Evaluation of Site Risks section. Environmental monitoring. What will this consist of? Is any such program currently carried out at these sites? If a specific environmental program now exists, what budget is it under? [U-W]

**Response:** Environmental-monitoring activities can consist of various types of monitoring (air exposure, direct exposure, and groundwater contamination). The environmental monitoring for each of the remedial action groups, if necessary, is different. Additional details concerning the environmental monitoring for the remedial action groups can be found in various sections of the ROD. Many of the sites requiring remedial action are not currently monitored for releases to the environment. Currently, there are several programs conducting environmental monitoring at the INEEL. Each of these monitoring programs has different criteria and purposes along with budgets.

#### **B.6.2. Institutional Controls**

Comment 137 : A Commentor wanted to know how long are institutional controls (e.g., fences, regulatory restrictions) assumed to last? Page 19 says residences might be built at ICPP after 2095 but that water supply wells will be prohibited within the current fence. How will that prohibition be maintained? By whom? How does the current ICPP fence relate to the I-129 plume? [SRA-W]

**Response:** Institutional controls will be maintained long after the 2095-restoration timeframe has passed for areas where an unacceptable risk remains. Whether fencing will be required or other controls are sufficient to prevent unauthorized access to these areas is under review and will be part of the remedial design process. It is recognized that other actions may be necessary to deal with the contamination in the SRPA within the INTEC fence and therefore an interim action will be implemented on the SRPA. This will allow for actions to be taken to deal with the contamination outside the fence and additional investigation along with remedial action alternative evaluation to be conducted in support of the Tank Farm RI/FS. Land use and other restrictions will be placed on the areas requiring long-term institutional control and will be maintained by DOE or another government agency. The area of the I-129 plume that currently presents an unacceptable condition (exceeds drinking water standards) extends both inside and outside of the INTEC (ICPP) fence downgradient to approximately the Central Facilities Area (CFA). The institutional controls to be implemented under this ROD are contained in Section 11 of the ROD. These institutional controls are presented in tabular format for each of the remedial action groups.

Comment 138 : A Commentor wondered how the Agencies would implement institutional controls over engineered barriers or design a combination of the two? [SRA-W]

**Response:** Selection of institutional and engineering controls is determined during the development of the remedial action alternatives for evaluation purposes. Additional controls, both institutional and engineering, may be applied during the remedial design process. Combinations are factored into the alternative as necessary. The ICDF will consist of a combination of institutional controls and physical (engineering) barriers. Institutional controls, like land use restrictions are a necessary part of the remedial action. Prevention of biointrusion and material degradation are not institutional controls, but these issues are addressed by physical (engineering) controls.

Comment 139 : A Commentor felt it was unclear how land use restrictions can be, or will be, imposed and documented. This BLM property is currently under DOE control. Will DOE provide a legal description of restricted property to the BLM? How will BLM control the restricted property? Please describe, in the ROD, how land use restrictions will be accomplished. [C-W]

**Response:** This ROD contains a description of institutional controls to be implemented. A detailed IC plan will be developed during remedial design to describe the controls that will be placed on the land beneath and surrounding the CERCLA release site area at INTEC.

## **C. RELEASE SITE GROUPS AT WAG 3**

### **C.1. Group 1: Tank Farm Soils**

Comment 140 : A Commentor wondered if the cost of tank farm soil remediation included in the current ICPP cleanup cost estimates? [SRA-W]

**Response:** The cost of final remediation of the Tank Farm soils is not included in the cost estimates. Under this ROD for the Tank Farm Soils (Group 1), an interim action is selected. The Tank Farm Soils cost estimate only reflects the scope of items described in the interim action alternative evaluation and scope discussion in the cost estimate. For the final action on the Tank Farm Soils, cost estimates will be developed for the remedial action alternatives that will be developed and evaluated for Tank Farm RI/FS (OU 3-14).

Comment 141 : A Commentor recommended that DOE move quickly in making its final risk management decision for the Tank Farm Soils. [CAB-W]

**Response:** We support the need for action where feasible. However, under the OU 3-13 RI/FS, evaluation of the INTEC Tank Farm Soils was done using the limited information from the scoping investigations (Track 1 and Track 2 studies) and process knowledge. With this limited knowledge the final action the Tank Farm would have had a very large associated contingency (hundreds of millions of dollars). Based on this, it was decided to consider an interim action on the Tank Farm Soils for the near future and collect the necessary information to make a decision without such a large uncertainty. Collecting and analyzing data along with the decision making activities is being conducted under the OU 3-14 Tank Farm RI/FS.

Comment 142 : A Commentor noted that the Proposed Plan states that a final risk management decision is anticipated for the Tank Farm Soils in 2004. The Commentor wondered why it will take that long to make that decision and recommend DOE move quickly to safely manage the risks posed by the Tank Farm Soils. [CAB-W]

**Response:** We appreciate that we need to expedite the cleanup process where feasible. However, the tank farm soils interim action will reduce the risk to the environment and in particular the SRPA. Even if a final action would have been selected under this ROD, the implementation of the alternative would have been phased in over a long period of time. The final part of the action would likely occur around 2045, following D&D of the area around the Tank Farm. The actions taken under the interim action will be continued, along with other activities to reduce the impact on the environment, until the final activities are implemented. This approach means that we will manage the risk at the Tank Farm safely and efficiently. Insufficient information was collected prior to and during the OU 3-13 RI/FS to make a final decision without a very large contingency and uncertainty. In order to collect the necessary information, develop and analyze alternatives, and conduct the decision making activities, a new RI/FS is being undertaken. This RI/FS (OU 3-14 Tank Farm RI/FS) will collect and analyze samples from within the Tank Farm. In addition, the results from the Idaho HLW & FD EIS will be considered in the remedial alternatives developed and analyzed. Recent evaluations on the scope, schedule and budget for the OU 3-14 RI/FS indicate that it will take more time than expected when the Proposed Plan was released. A final risk management decision for OU 3-14 is now expected to be completed prior to 2008.

Comment 143 : A Commentor had questions regarding Group 1 Tank Farm Soils: If only an interim action is currently contemplated, why is this site group/OU group/ CPP group included in this Proposed Plan? [U-W]

**Response:** An interim action was selected for the INTEC Tank Farm to reduce the impact on the perched water and SRPA. In the evaluation of risks to the groundwater, the largest source of contamination was identified as the INTEC Tank Farm. As the contamination is migrating vertically downward, reducing the driving mechanism (water) will increase the travel time and decrease to impact on the groundwater. The interim action selected is intended to significantly reduce the amount of water driving the contamination into the groundwater. As such, the sites within the INTEC Tank Farm group are included in this ROD.

Comment 144 : A Commentor had questions regarding Group 1 Tank Farm Soils. It is stated that “non-radionuclide contaminants may be present.” Why don’t we know? Weren’t the RI, BRA, FS, or FS supplement completed? Or were they incomplete? If so, why? If no, why isn’t the characterization of contaminants fully presented here? If the complete characterization of the Tank Farm Soils has to be deferred to the OU 3-14 RI/FS, as stated on page 13, why not just pull this whole group out of this document? [U-W]

**Response:** Within the INTEC Tank Farm, there is incomplete knowledge concerning the contaminants, both radionuclide and non-radionuclide, and their corresponding concentrations. Previous sampling

efforts in the INTEC Tank Farm have generally not analyzed for non-radionuclides. The RI/BRA, FS, and FSS Reports were complete documents. These documents identified the data gaps in the existing knowledge. To fill in the data gaps and make a more informed and better decision on the INTEC Tank Farm. A RI/FS project is being planned to resolve the data gaps, evaluate remedial action and eventually select the final remedy for the INTEC Tank Farm group.

### **C.1.1. Group 1 Description**

Comment 145 : A Commentor pointed out that Tank Farm Soils: Site CPP-33, listed as a Tank Farm Soils Group site on page 12, is not shown in Figure 4. [U-W]

**Response:** The Commentor is correct in that Site CPP-33 was left off of figure 4. Site CPP-33 is part of remedial action group 1 (INTEC Tank Farm area). For future documents, additional effort will be expended to insure that sites listed in text match the figures.

### **C.1.2. Group 1 Alternatives**

Comment 146 : A Commentor felt that grading to control surface water is an activity which should have been conducted as soon as there was reason to believe that surface water infiltration presented a risk. However, the Agencies have not demonstrated, through published/measured  $K_d$ s and measured infiltration rates, that surface percolation is a risk-driver at this site. Therefore selection of this alternative in a ROD is premature. It would better fit a removal action than a ROD. [C-W]

**Response:** The infiltrating water requiring control is not only from the Tank Farm fenced area. Additional water impacts comes from the drains located on the building and structures in and surrounding the Tank Farm. Reducing the infiltration of water through the Tank Farm Soils will increase the travel time of the contaminants in the soils, irregardless of the contaminant specific retardation factor ( $K_d$ ). This reduction in infiltration will subsequently reduce the impacts on both the Perched Water and SRPA. Under this ROD, an interim action on the Tank Farm Soils is being undertaken. The final action on the Tank Farm Soils will be evaluated and selected under the OU 3-14 project. There is no need to undertake or consider a removal action to implement the interim action for the Tank Farm Soils when the activities are part of this ROD.

Comment 147 : A Commentor was concerned the interim solution is, in essence, capping it, putting some dirt on it, bury it. That's the first step. Question: Is that going to be the first step towards a defacto cap and fill approach? It's not at all clear that's the right thing to do for the Tank Farm and to leave the soil in place, capped over. [DK-TT]

**Response:** The proposed Tank Farm interim action is not a capping solution. The goal of the interim action is to reduce the amount of water infiltrating through the soils within the Tank Farm area. Reduction of the infiltration is not necessarily the first step in a defacto capping approach. The OU 3-14 RI/FS will evaluate a range of remedial action alternatives.

Comment 148 : A Commentor was concerned that the interim solution will turn out, migrate into the final solution. You made it very, very clear that this is merely an interim solution and does not in any way affect whatever the final solution will be made. [DK-TT]

**Response:** The proposed Tank Farm interim action is not a final action. Interim actions that are taken cannot be inconsistent with the final remedy. The OU 3-14 RI/FS will evaluate a range of remedial action alternatives.

Comment 149 : A Commentor wondered, are they going to cap around the Tank Farm, basically? And that's 80 percent reduction of rainfall? I thought the Tank Farms were leaking not just the piping and are the pipes leaking now. [PR-TT]

**Response:** In the development and evaluation of the proposed interim action, capping around the Tank Farm was not considered. Sealing the surface of the Tank Farm is a necessary component of the remedial action. In addition, rerouting of the drainage from the various buildings in the Tank Farm area may be necessary to reduce the infiltration. The evaluation, for the Tank Farm interim action, focused on a goal of reducing to infiltration in the Tank Farm by 80%. The remedial design will further evaluate the infiltration issue and determine the specifics for the implementation. Concerning the leakage issue, there is no evidence that the tanks have leaked or are leaking. The known releases are only from the transfer lines and valve boxes. Actions have been taken to correct the leaking lines and valve boxes and to prevent future releases.

Comment 150 : A Commentor wanted to emphasize the fact that they didn't want to see an interim action on the Tank Farms get to far -- I don't want it to get past the point of no return where you put so much time and so much money into this action that it becomes the final solution when it really shouldn't be the final solution. [MMS-TT]

**Response:** We agree with the Commentor. An interim action under CERCLA can not be inconsistent with the final action for the site or OU. The evaluation of alternatives for the Tank Farm RI/FS will begin with the continuation of the interim action for the Tank Farm and build upon the interim action.

## **C.2. Group 2: Soils Under Buildings and Structures**

Comment 151 : A Commentor noted that several spills, in addition to CPP-80, included both RCRA listed and characteristic waste. The soils must be managed as listed waste, and possibly as characteristic waste. This is important so that people understand how much hazardous waste is proposed for disposal at the proposed ICDF. [C-W]

**Response:** The ICDF will be designed and constructed to be compliant with the requirements of a RCRA Subtitle C facility. Volume estimates for the INEEL CERCLA hazardous and mixed waste candidate materials (soils and debris) are presented in Appendix C of the FSS Report.

Comment 152 : A Commentor wanted to know, if the sites are inaccessible and poorly characterized how were the COCs in the sidebar determined? How are the Agencies sure risk even exists at those sites that have not been sampled? Those sites which have not been characterized and determined to present a risk to human health and the environment should be removed from this Proposed Plan and discussed in the future when COCs, risk, and fate and transport are better understood. [C-W]

**Response:** The analysis and evaluation conducted on the soils under building sites (Group 2) were based on what information was available. The general characteristics of the material (waste) released to the environment was known. In addition, an approximate volume of material released was known. For the evaluation of risk and remedial actions, the COCs used were the constituents contained in the waste released. The risks were evaluated based on the mass (concentrations and volumes) of the COCs. As such, there was sufficient information available to evaluate the release site risk and remedial action alternatives.

Comment 153 : A Commentor quoted from the Proposed Plan that, "...source releases are not well defined" and wanted the Agencies to "stop this nonsense until they are well defined and appropriate

remedial alternatives can be proposed and debated!! Remove this site and preferred alternative from this Proposed Plan.” [C-W]

**Response:** We disagree with the Commentor. The analysis and evaluation conducted on the soils under building sites (Group 2) were based on what information was available. The general characteristics of the material (waste) that released to the environment was known. In addition, an approximate volume of material released was known. For the evaluation of risk and remedial actions, the COCs used were the constituents contained in the waste released. The risks were evaluated based on the mass (concentrations and volumes) of the COCs. As such, there was sufficient information available to evaluate the release site risk and remedial action alternatives.

Comment 154 : A Commentor stated that he was “just curious, the soils under the building, that's sort of totally different from the Tank Farm situation. And then quantity-wise, I mean, it just seems like you're not going to excavate those because the Chem Plant is there to stay, it seems. And quantity-wise do we have any quantity of what those materials amount to? Are you going to look at stabilizing them, or what are you looking at?” [PR-TT]

**Response:** The Commentor is correct in that the soils under the buildings are being treated differently than the Tank Farm soils. The 4 sites within this group are relatively small sites located beneath currently operating facilities. The amount of contaminated soil for the 4 sites within this group is estimated to be approximately 1600 yds<sup>3</sup>. Ultimate disposition (D&D) for the facilities above these sites has not been determined. Decisions concerning the D&D of these facilities may result from the analysis being conducted for the Idaho HLW & FD EIS and the RCRA/HWMA closure plans for Interim Status Units. In order for the soils within this group to be removed, the building would need to be removed. Should the facilities be left in place, an engineered containment structure (Cap) may be constructed over the site, if necessary, to prevent the contamination from leaching and migrating the SRPA. Currently, in-situ stabilization is not anticipated for these sites unless it is necessary prevent leaching and subsidence. If the buildings were removed, the contaminated soil would be removed and disposed.

Comment 155 : A Commentor made the following observations on Group 2: To even consider it seems premature. We're kind of putting the cart before the horse. We're making decisions now on how the soils are going to be dealt with when no decision has been made and how the building is going to be dealt with. It seems to me the logical thing to do is to decide what's to be done with the building, probably on a case-by-case basis. What are we going to do with 603? Are we going to tear it down? Cap it over? Take the pieces away, whatever? And then having made that decision, we'll have -- we can say, “What are we going to do about the soils?”

[DK-TT]

**Response:** The Commentor is correct in that a decision concerning the disposition of the soils under the buildings are being made prior to the decision on the disposition of the facilities. The known scope of the FFA/CO for WAG 3 was evaluated within the OU 3-13 RI/FS for a comprehensive evaluation. The sites within Group 2 are identified scope in the FFA/CO. Ultimate disposition (D&D) for the facilities above these sites has not been determined. Decisions concerning the D&D of these facilities may result from the analysis being conducted for the Idaho HLW & FD EIS and the RCRA/HWMA Closure Plans for Interim Status Units. Currently, there are several alternatives (removal [i.e., clean closure], risk based closure [partial removal], and landfill [capping]) being evaluated for various facility dispositions under the Idaho HLW & FD EIS. In order for the soils within this group to be removed, the building would need to be removed. Should the facilities be left in place, an engineered containment structure (Cap) will be constructed over the site to prevent the contamination from leaching and migrating the SRPA. If the buildings were removed, the contaminated soil would be removed and disposed. The Agencies believe sufficient information is available to select the contingent remedy.



Comment 156 : A Commentor offered the following recommendation regarding Group 2 C Soils under Buildings and Structures. Again, characterization is incomplete. I suggest it be completed before being presented to the public. [U-W]

**Response:** For the Soils Under Buildings group, there is incomplete knowledge concerning the contaminants, both radionuclide and non-radionuclide, and their corresponding concentrations. Development of the source terms evaluated was based on process knowledge. This process knowledge involved the waste stream released along with an estimate of the volume. For two of the sites (CPP-87 and -89), sampling data was also used in the development of the source terms. Additional characterization activities will be conducted during the D&D of the various facilities. This additional information will be used in the planning of final D&D activities.

### C.2.1. Group 2 Description

Comment 157 : A Commentor questioned, "please define the difference between hazardous and radioactive releases." [U-W]

**Response:** Hazardous releases are releases of waste containing non-radionuclide contaminants. Metal and organic contaminants are considered to be hazardous constituents. Radioactive releases are releases of waste containing radionuclide constituents. For many releases both hazardous and radioactive constituents are present in the waste material.

### C.2.2. Group 2 Alternatives

Comment 158 : A Commentor questioned, "I guess I just want to stress for the scoping, again, to quantify -- I mean, the list goes to plutonium-239 and through the whole gamut, there, of the soil under the building group. I was a little confused there, but it does look -- since you're moving the stuff out of the wet area, so to speak, that you couldn't actually go down and excavate the soil. Is that being studied?" [PR-TT]

**Response:** The wet area, CPP-603 is divided into a wet side and a dry side. The spent nuclear fuel is being removed from the wet side. The site of concern is beneath the dry side of CPP-603. Removal of the spent nuclear fuel from the dry side is expected to be completed prior to 2035. The D&D of the CPP-603 facility is not part of OU 3-13. However, further analyses of cumulative impacts from the CPP-603 building will receive consideration by the HLW & FD EIS.

Comment 159 : A Commentor felt that it's not clear that even if the building is dismantled completely and taken away, that all buildings will be dealt with -- the soil will be dealt with in the same way. So, if I were doing it, I would just strike Group 2 from the plan entirely because, in fact, no decision has been made. You're saying that when some other decision was made, we're going to apply this decision we've made now. That doesn't make any sense. [DK-TT]

**Response:** The Commentor is correct in that decisions under the OU 3-13 project will be made prior to the decisions concerning the facility being made. The known scope of the FFA/CO for WAG 3 was evaluated within the OU 3-13 RI/FS for a comprehensive evaluation. The sites within Group 2 are identified scope in the FFA/CO. Ultimate disposition (D&D) for the facilities above these sites has not been determined. Decisions concerning the D&D of these facilities may result from the analysis being conducted for the Idaho HLW & FD EIS and RCRA/HWMA Closure Plans for Interim Status Units. Should the facilities be left in place, an engineered containment structure (Cap) will be constructed over

the site to prevent the contamination from leaching and migrating to the SRPA. If the buildings were removed, the contaminated soil would be removed and disposed.

**Comment 160 :** A Commentor felt that the alternative for Group 2 soils is the No Action Alternative because no action is going to be done as a result of this decision. I mean, if we accept the recommended alternative, what is going to happen? The answer is, absolutely nothing until some other things happen. And if we tear the building down, haul it away, it's not clear that digging up the soil is the right thing. Maybe entombing it and capping it is the right thing. That's not clear. They're related items. You can't make a decision like that. So we're making decisions which could be wrong decisions. [DK-TT]

**Response:** It appears that we confused the Commentor. The preferred alternative is not a No Action Alternative, but a staged alternative. The first part of the alternative would consist of establishing and implementing the monitoring requirements and implementing the other controlling actions. The second part of the alternative would be the construction of the engineered containment structure (cap) over the contaminated site to prevent the contamination from leaching and migrating to the SRPA following the D&D of the facility, if the facility is closed in place. If the buildings were removed, the contaminated soil would be removed and disposed. Concerning whether it is the right thing to do to remove the contaminated soil if available, it is more cost-effective and risk reducing to remove and dispose of the contaminated soils. Ultimate disposition (D&D) for the facilities above these sites has not been determined. Decisions concerning the D&D of these facilities may result from the analysis being conducted for the Idaho HLW & FD EIS, and RCRA/HWMA Closure Plans for Interim Status Units. Based on the evaluations conducted, construction of an engineered containment structure (cap) appears to be the correct decision if the building is left in place following completion of the D&D. However, if new information became available, changes to the alternative could be considered and implemented as necessary.

**Comment 161 :** A Commentor wanted the heading for Group 2 Soils to clearly identify the contingent nature of the decision. [U-W]

**Response:** Alternative 2 is the selected remedy under this ROD. The selected D&D alternative for these facilities have not been selected at this time. If the facility were removed during the D&D activities, the soils would be excavated and disposed in an appropriate disposal facility. This contingency was discussed in the Proposed Plan (Alternative 3).

**Comment 162 :** A Commentor had a question regarding the Soils under Buildings and Structures. What is the anticipated cost of implementing Alternative 2 AND then Alternative 3, after D&D? Will money be available to cover later need for Alternative 3? Will it be WAG 3 money, or will it be D&D money? Or some other fund? [U-W]

**Response:** The selected remedy is an "either or," not a "both" selected remedy. Implementation of the remedial action would be initiated following the D&D activities. If Alternative 2 is implemented, the cost would be \$17.9M. For Alternative 3, the cost would be \$13.0M.

### **C.3. Group 3: Other Surface Soils**

**Comment 163 :** A Commentor had a question regarding a statement in the Proposed Plan that states, "some sites (e.g., CPP-36 and -91) have contamination greater than 10 feet bgs. Are there more? If so, list them. If not, why vaguely say "some" when the specific number is actually known. [U-W]

**Response:** Yes, many of the sites have contamination below 10 feet. Both Sites CPP-36 and -91 were specifically pointed out as they have significant contamination present below the 10 feet depth. However, most of the sites do not have significant contamination below 10 feet. A description of the nature and extent of contamination (including depth of contamination) at these soil sites is included in Section 5 of this ROD.

### C.3.1. Group 3 Description

Comment 164 : A Commentor noted that “nonradionuclide contaminants” are included in the COCs. Please state whether these soils are contaminated with RCRA listed waste or exhibit a characteristic of hazardous waste. This is important to determine how much hazardous waste is being proposed for disposal in the ICDF. [C-W]

**Response:** The COCs were developed from a risk assessment standpoint. Some release sites may have concentrations of “nonradionuclide contaminants” high enough to qualify as RCRA characteristic waste. In addition, some release sites have listed waste code issues. The sites with the listed waste code issues are presented in Appendix G of the FS Report. Also, Appendix C of the FSS Report contains information on the candidate materials for disposal in the ICDF, including “nonradionuclide contaminants.”

Comment 165 : A Commentor had a question regarding whether soils pass or fail TCLP? Is lead greater than 400 ppm? [C-W]

**Response:** Sampling analysis conducted under the CERCLA program generally analyzed for total constituent concentrations. This analysis is not the same as the Toxic Characteristic Leaching Procedure (TCLP) sampling analysis conducted for hazardous waste characterization processes. There is a method to convert total metal analysis results to TCLP results for initial characterization. Under this method, there are release sites at INTEC that are potentially RCRA characteristic. Future sampling analysis would be conducted for final waste characterization. None of the release sites under this ROD have concentrations of lead at or exceeding 400 mg/kg.

### C.3.2. Group 3 Alternatives

Comment 166 : A Commentor had a question regarding Other Surface Soils (Group3). The preferred Alternative 4-A is to excavate contaminated surface soils to a depth of ten feet. A review of the RI/FS Appendix C borehole sample data for Strontium-90 and Cesium-137 shows that DOE’s arbitrary ten foot depth would leave most of the contamination in place because it goes down generally to thirty feet. Unfortunately, there is not sample data for all of the sites in this group (and there should be), but at least four sites need to go to around 15 feet and four sites need to go to about 30 feet in order to recover the bulk of the contamination. Stopping at ten feet is not acceptable and is not supported by the data. To cite an example, CPP-36 has 50,000 pCi/g of Sr-90 and 200,000 pCi/g of Cs-137 at fifteen feet of depth. [INEL-95/0056] A fixed health base cleanup standard is needed and then require DOE keep digging until the samples show that the contaminates do not exceed the standard is needed. [CB-W]

**Response:** It is recognized that there is contamination at depths below 10 feet. The 10 feet excavation depth was selected based on the residential scenario, which assumed a basement excavated to 10 feet, for evaluation in the RI/BRA Report. This assumption was also used in the development of cost estimates and evaluations for the FS Report. Using this information, an excavation to 10 feet will result in protection for potential surface receptors. The residential basement scenario is also protective of future industrial or commercial construction. However, some sites have large amount of contamination below 10 feet. During the remedial design, the actual approach and excavation depths, which may go below 10 feet, will be determined to ensure that the SRPA is protected from the contaminants. Although the

remedial design may call for excavation to depth greater than 10 feet, we believe that the volume estimates are reasonable for evaluation purposes.

Comment 167 : A Commentor felt, whether these wastes are disposed of at the DOE site, or whether they are disposed of at the private disposal site, both of those options we believe should be looked at and whatever option that is selected, that disposal site should not be over the Snake River aquifer. [SR-TB]

**Response:** Both disposal at an on-site and off-site facility were evaluated. In the case of the off-site disposal facility, a commercial disposal facility was used for the evaluation. Although the area evaluated for the on-site disposal site is over the SRPA, the facility would be designed, constructed, operated, and closed so as to not adversely impact the aquifer. In addition, disposal in the on-site facility was determined to be much more cost-effective, without presenting unacceptable risk to the aquifer versus off-site disposal.

Comment 168 : A Commentor offered, "In relation to looking at the cost of disposal for public versus private disposal, we received the explanation earlier that off-site disposal would be markedly more expensive than an on-site solution. Suggest look at what the actual costs of these other off-site options for disposal might be. Particularly, if you're looking at comparing a newly developed DOE on-site disposal facility, which would include all the engineering work, all the contractor work, all the coordination among contractors and among government Agencies, essentially that it be a fully loaded cost estimate, not simply the cost of disposal once the place was opened and ready to accept waste. That it really be a fully loaded cost, to consider all the development expenses including the government Agencies involved, if those costs then become paired against private sector options and also existing DOE facility options." [SR-TB]

**Response:** Both disposal at an on-site and off-site facility were evaluated. In the case of the off-site disposal facility, a commercial disposal facility was used for the evaluation. For the off-site disposal facility, the actual DOE cost of previous disposal activities, such as the disposal fee and transportation costs, along with other cost items were considered in the cost estimate. The on-site disposal cost estimate considered the cost of design, construction, operation, closure, and monitoring (i.e., fully loaded cost estimate) of the disposal cells for the ICDP. Following the development of the cost estimates, on-site and off-site were compared. The cost estimates, along with the assumptions, are contained in Appendix A of the FSS Report, which is contained in the Administrative Record. Generally, the disposal cost at other DOE facilities is comparable or higher than disposal at commercial disposal facilities. However, waste acceptance criteria allows the other DOE facilities to accept waste that is not acceptable at commercial disposal facilities.

Comment 169 : A Commentor recommended that the Agencies reject any alternative that would involve the disposal of cleanup materials on the site over the sole source aquifer. Propose using an off-site commercial company. [SR-TB]

**Response:** We thank the Commentor for the comment. Both disposal at an on-site and off-site facility were evaluated. In the case of the off-site disposal facility, a commercial disposal facility was used for the evaluation. Although the area evaluated for the on-site disposal site is over the SRPA, the facility would be designed, constructed, operated, and closed to not adversely impact the aquifer. In addition, disposal in the on-site facility was determined to be much more cost-effective without increased risk to the aquifer versus off-site disposal.

Comment 170 : A comment about the 10-foot basement scenario. "In the plan, again, there is a limit, in writing, of 10 feet. You've told us otherwise here orally, but what we go by is what is in writing and what we can cite, so there needs to be -- I think the whole plan needs to be written, rewritten, and resubmitted to show your true intent about what you're going to do with this stuff and that you're not going to stop at

10 feet just because it's 10 feet. You're only going to stop when you reach a level that won't continue to impact the perched water or the aquifer below whatever global limitations you've got there." [CB-TM]

**Response:** It is recognized that there is contamination at depths below 10 feet. The 10 feet excavation depth was selected based on the residential scenario, which assumed a basement excavated to 10 feet, for evaluation in the RI/BRA Report. This assumption was also used in the development of cost estimates and evaluations for the FS Report. Using this information, an excavation to 10 feet will result in protection for potential surface receptors. However, some sites have large amount of contamination below 10 feet. During the remedial design, the actual approach and excavation depths, which may go below 10 feet, will be determined to ensure that the SRPA is protected from the contaminants. Although the remedial design may call for excavation to depth greater than 10 feet, we believe that the volume estimates are reasonable for evaluation purposes.

Comment 171 : One Commentor recommended that we refine off-site waste disposal cost estimates based on input requested from the various commercial disposal service providers. Respondents should be provided with updated volume and waste type projections for all INEEL waste streams reasonably likely to require disposal, and be asked to identify closure, post-closure care, general and administrative overhead and other fees included in their estimates. Verify that full life-cycle costs (including closure, post-closure care and monitoring, general and administrative expenses, etc.) are included in cost estimates for on-site DOE disposal. This will allow meaningful comparison with "fully loaded" off-site disposal costs. To further promote "apples to apples" comparisons, costs for Chem Plant disposal alternative should explicitly present the cost of an on-site facility sized to handle the same 83,000 cubic yards of waste analyzed for off-site burial. I believe that these analytical refinements will reveal a much smaller differential between on-site and off-site disposal costs. [L-W]

**Response:** The cost estimates performed in the Feasibility Study do reflect actual costs from previous DOE disposal activities. These estimates are preliminary, order of magnitude estimates and will be refined as remedial design progresses. The estimates conform with Office of Management and Budget (OMB) Circular A-94 guidelines and the NCP for comparison of life-cycle alternative costs.

Comment 172 : A Commentor noted CPP-36 and -91 have contamination that reaches to the basalt, about 40-ft bgs. Thus the risk from this soil can be attributed to direct exposure only for that soil which is between 0-10 ft bgs. Is there another, viable, risk pathway for the soil below 10 ft bgs? If not, the proposed remedial action need not address the deeper soil contamination. [C-W]

**Response:** It is recognized that there is contamination at depths below 10 feet. The 10 feet excavation depth was selected based on the residential scenario, which assumed a basement excavated to 10 feet, for evaluation in the RI/BRA Report. This assumption was also used in the development of cost estimates and evaluations for the FS Report. Using this information, an excavation to 10 feet will result in protection for potential surface receptors. The residential basement scenario is also protective of future industrial or commercial construction. However, some sites have large amount of contamination below 10 feet. During the remedial design, the actual approach and excavation depths, which may go below 10 feet, will be determined to ensure that the SRPA is protected from the contaminants. Although the remedial design may call for excavation to depth greater than 10 feet, we believe that the volume estimates are reasonable for evaluation purposes.

Comment 173 : A Commentor asked, since soil will be excavated to a depth of 10 feet and covered with "clean" fill and no mention is made that this alternative will, or will not, be protective of groundwater. Contamination, at depth, seems to be a threat to groundwater at the tank farms. Why is similar contamination not a threat to groundwater at these sites? [C-W]

**Response:** It is recognized that there is contamination at depths below 10 feet. The 10 feet excavation depth was selected based on the residential scenario, which assumed a basement excavated to 10 feet, for evaluation in the RI/BRA Report. This assumption was also used in the development of cost estimates and evaluations for the FS Report. Using this information, an excavation to 10 feet will result in protection for potential surface receptors. However, some sites have contamination below 10 feet. Groundwater fate and transport modeling from the Group 3 sites indicated that groundwater risk from these sites is acceptable. However, during the remedial design, the actual excavation depths may go below 10 feet. Although the remedial design may call for excavation to depth greater than 10 feet, we believe that the volume estimates are reasonable for evaluation purposes.

Comment 174 : A Commentor wanted the Agencies to consider above ground containment. Basically, I want you to include in your impact statement and scoping studies the Nevada study that came out last year on the transportation of plutonium into the water supply. The actual individual doses of plutonium if inhaled, resuspended, pumped up, integrated, and inhaled. I think, if you study it correctly, you will see that containment above ground in barrels not only provides jobs for the INEEL, but it is the total best way to contain it. It seems to me you're always in these cleanup projects ignoring the fact that the material would require 240,000 years [10X half-life] for plutonium management. [PR-TT]

**Response:** Containment of the waste above ground is a possible option that was not studied. There are a number of factors that limit the cost effectiveness and risk effectiveness of above ground storage. As the waste being considered for the ICDF is a large volume with relatively low concentrations, a very large facility would need to be constructed. In addition, the waste would have to be packaged and monitored periodically. Both of these operation would increase the amount of exposure that workers would receive. In addition, there would be an increase in the amount of exposure to the public. With containment above ground, the containers would be required not to leak any material and this would require periodic repackaging. Based on these issues, containment in an above ground facility eliminated from detailed analysis in the feasibility study.

Concerning the material used in the EIS, relevant documents used in the development of the analysis and decision making will be included into the Administrative Record. Evaluation of the ICDF is being conducted as part of a CERCLA investigation and decision making process and with CERCLA being functionally equivalent to the NEPA process, no additional scoping or NEPA is required for the ICDF.

Regarding the time required for the risk from plutonium to become acceptable, the ICDF would be designed to protect the SRPA for both short and long-term impacts. In the case of surface receptors, the engineered containment structure (cap) would be designed and constructed to last for at least 1,000 years. Also, there would be long-term surveillance and monitoring to detect releases from the disposal cells. This would allow for corrective actions to be implemented to correct problems, if necessary.

Comment 175 : Another Commentor added that "not everybody would agree that things up above ground is a safer configuration. It's subject to fire, floods, personnel exposure doing inspections. So if you integrated exposure over time, it's going to be much greater than that which is buried, and they have no exposure pathways." [A-TT]

**Response:** We agree with the Commentor.

Comment 176 : A Commentor wondered, since at some sites, the contamination extends downward through 40 feet., why is only 10 feet going to be cleaned up? [U-W]

**Response:** The Commentor is correct in pointing out that there is contamination below 10 feet. An excavation depth of 10 feet was used for the residential basement scenario in the RI/BRA evaluations. In

developing and analyzing the alternatives for the FS, the 10 feet depth was used. This 10 feet depth is protective for surface receptors. During the remedial design, the actual approach and excavation depths, which may go below 10 feet, will be determined to ensure that the SRPA is protected from the contaminants. Although the remedial design may call for excavation to depth greater than 10 feet, we believe that the volume estimates are reasonable for evaluation purposes.

### C.3.3. INEEL CERCLA Disposal Facility (ICDF)

Comment 177 : A Commentor wanted to know, if this disposal facility is built, radioactive, mixed and toxic wastes would likely be directed there not only from INEEL but DOE facilities in other states as well. This concern is bolstered by my understanding that DOE is actively considering a regionalized disposal system, using two or three federal sites to be selected from a short list that includes INEEL. The contemplated disposal site would be very large, covering 54 acres with a capacity of more than 13 million cubic feet of waste. (By comparison, the eleven western states using the Richland, Washington commercial low-level radioactive waste disposal facility now ship about 100,000 cubic feet of waste per year). [L-W]

**Response:** We cannot emphasize enough that the ICDF is only for INEEL CERCLA cleanup waste disposal. These wastes already exist above the "sole source aquifer" and if not addressed will present a unacceptable risk if the INEEL land is developed for private use in the future. Waste acceptance criteria will be developed as part of the remedial design process. Only wastes which do not pose a threat of exceeding drinking water standards, or exceed a 1 in 10,000 excess carcinogenic risk in the underlying aquifer, whichever is more stringent, will be permitted to be disposed in the engineered landfill. WAG 3 CERCLA wastes that cannot be safely managed on INEEL will be disposed of in an off-site disposal facility in full compliance with state and federal laws and regulations. Generation of LLW in Western States is not relevant to CERCLA disposal at the INEEL INTEC. The referenced site in Richland Washington would not be suitable for the mixed LLW addressed in this ROD since it does not meet the rigorous design standards contemplated for the ICDF.

Comment 178 : A Commentor felt that the idea for an ICDF should be scrapped. That the Agencies, would site the facility above a sole source aquifer is ludicrous. Such a facility cannot be made "safe" for the many hundreds of years necessary for the radionuclides to decay. It cannot be made "safe" for the hazardous and polychlorinated biphenyl (PCB) wastes which will not decay and which will eventually leak and reach the aquifer. The double liners and leachate collection system merely delay the inevitable. [C-W]

**Response:** We disagree with the Commentor. The ICDF can be designed, constructed, operated, and closed while remaining protective of the SRPA. The ICDF would be designed to not adversely impact the SRPA. Waste materials (soils and debris) from INEEL CERCLA projects would be required to meet the acceptance criteria for ICDF. If treatment is necessary to meet the acceptance criteria, the waste would be treated prior to disposal. The engineered barrier (cap) will be designed to provide the long-term protection of both the surface receptors and the SRPA, even if the bottom liners were to fail.

Comment 179 : A Commentor noted the facility capacity is expected to be 510,000 yd<sup>3</sup>. CERCLA is expected to use about 466,000 yd<sup>3</sup>. What waste is expected to fill the remaining, seemingly excess, capacity? I trust that only CERCLA-related waste will be admitted to the facility. [C-W]

**Response:** For evaluation and analysis purposes, six disposal cells were considered. Both percolation ponds were included and evaluated as if retrofitted into two of the disposal cells. The remaining four disposal cells were all of the same size and shape. All six disposal cells were necessary to handle the potential candidate materials (soil and debris) and results in the excess capacity. The ICDF would be

constructed and operated one cell at a time. As the operating cell is approaching capacity, the next disposal cell would be constructed. Waste materials from only INEEL CERCLA projects would be acceptable for the ICDF, provided that the waste meets the acceptance criteria.

Comment 180 : A Commentor noted the first paragraph gives an estimated volume of 82,000 yd<sup>3</sup>. The third paragraph estimates a total volume of CERCLA waste at 466,000 yd<sup>3</sup>. Subtracting, one finds that the Agencies plan on placing about 384,000 yd<sup>3</sup> of waste from other sites. Please provide details of what these other sites might be. [C-W]

**Response:** The volume estimate of 82,000 yd<sup>3</sup> is for the soils contained in Group 3 (Other Surface Soils). In the evaluation of the ICDF, other INEEL CERCLA wastes (soils and debris) were considered. All of the candidate waste materials are discussed in Appendix C of the FSS Report. These other candidate waste materials could potentially come from the other WAGs at the INEEL. Only waste materials from INEEL CERCLA remedial and removal actions would be acceptable for disposal in the ICDF, provided that the waste meets the acceptance criteria.

Comment 181 : A Commentor noted that protection of this highly productive resource [SRPA] is essential to the future of Idaho's agricultural economy, as well as being a major source of drinking water for hundreds of thousands of Idaho citizens. Surely a better alternative could be secured for disposition of radioactive and chemical waste produced at the Idaho National Engineering and Environmental Laboratory. [IFBF-W]

**Response:** There are contaminated soils, both dispersed and uncontained, throughout WAG 3 and other locations on the INEEL that present a risk to the SRPA since the contamination currently exists in an uncontrolled environment. Based on this, contaminated soils at WAG 3 would require some type of remedial action to reduce the impact on the SRPA. As a result, remedial action alternatives are required to address the risks. Several alternatives, including the ICDF, were considered for the management of the INEEL CERCLA waste (soil and debris). These alternatives considered both on-site and off-site disposal along with containment in place. For the ICDF alternative, the soils would be excavated and disposed of in a engineered disposal facility. The engineered facility, ICDF, would consist of RCRA compliant disposal cells, which include lined cells with leachate collection and significant groundwater monitoring systems designed to provide protection of the SRPA. Based on the evaluation of the alternatives, it was determined that the on-site disposal of the INEEL CERCLA waste at the ICDF would be the most cost effective, while being protective of the environment, with the SRPA in particular. The ICDF is to manage only INEEL CERCLA waste.

We share the Commentor's sentiments that the SRPA is a resource of immense importance to the state's agricultural economy, as well as providing the sole source of drinking water to residents along the plain. We also wholeheartedly agree that activities at the INEEL must be protective of human health and the environment, and comply with all applicable environmental laws and regulations. The comment expresses concern regarding the level of protectiveness of current and proposed disposal practices for radioactive material at the INEEL. Stringent waste acceptance criteria will be developed as part of the remedial design process. Only wastes which do not pose a threat of exceeding Idaho drinking water standards in the underlying aquifer will be permitted to be disposed in the engineered landfill. WAG 3 CERCLA wastes that cannot be safely managed on INEEL will be disposed of in an off-site disposal facility in full compliance with state and federal laws and regulations.

Comment 182 : A Commentor recommended that when you open the 26-acre plutonium dump, low level as it may be, it is better in the long run to simply contain this material in barrels, at this point they estimate 400 years, at which point you can rebarrel them. It is cheaper. It just takes so little inspection to keep this stuff above ground. What I think you-all are is in denial of that eventual end point. You are



systematically looking for closure on these cleanup projects as opposed to admitting that we have to contain this material above ground. [PR-TT]

**Response:** Containment of the waste above ground is a possible option that was not studied. There are a number of factors that limit the cost effectiveness and risk effectiveness of storage above ground. As the waste being considered for the ICDF is a large volume with relatively low concentrations, a very large facility would need to be constructed. In addition, the waste would have to be packaged and monitored periodically. Both of these operations would increase the amount of exposure that workers would receive. In addition, there would be an increase in the amount of exposure to which the public could be exposed. With containment above ground the containers would be required not to leak any material and this would require periodic repackaging. Based on these issues, containment in an above ground facility does not make sense from a risk or economical standpoint. For disposal in an engineered disposal facility, the material would be contained and not require continued repackaging or inspection. However, there would be long-term surveillance and monitoring to detect releases from the disposal cells. This would allow for corrective actions to be implemented to correct problems, if necessary.

Comment 183 : A Commentor wanted assurance that there will not be waste brought in from outside of INEEL to go in under any circumstances. [DK-TT]

**Response:** The only wastes that will be candidates for the ICDF will be from INEEL CERCLA projects. In addition, the authorization for disposal at the ICDF from other WAGs would need to be in the WAGs respective RODs, which will be subject to same the community involvement activities as OU 3-13.

Comment 184 : A Commentor recommended that the ROD include much more detailed information about the ICDF. [CAB-W]

**Response:** The Proposed Plan contained only summary level information concerning the remedial action alternatives. In the FS and FSS Reports, the details concerning the alternatives were presented. For the ICDF, additional information is contained in this ROD dealing with the conceptual alternative, implementation, and other considerations. The remedial design will contain the detailed information concerning the design and construction of the ICDF.

Comment 185 : A Commentor recommended that the ROD outline the exact location and size of each of the six cells planned for the ICDF and describe how each will be constructed, used, and closed. [CAB-W]

**Response:** This ROD identifies the area adjacent to the current percolation ponds as the location selected for the ICDF. The exact location and design along with sizing will be developed during the remedial design activities. This ROD discusses the criteria that will be used to determine compliance with the requirements during the construction, operation, and closure activities for the ICDF.

Comment 186 : The INEEL CAB recommends that the ICDF be constructed, filled, and closed using the phased approach referred to in presentations to the Board. We would like to see the ICDF to be as small and manageable as possible, yet we noted no description of the phased approach in the Proposed Plan. We recommend that the ROD include detailed information about how the phased approach will be implemented. [CAB-W]

**Response:** The use of a phased approach is included into this ROD. Under this ROD, the expected INEEL capacity needed will be constructed. Selection of disposal in the ICDF for non OU 3-13 soils and debris will be covered under other CERCLA decision documents. The remedial design will define the

actual design with a goal of minimizing the area used for the ICDF disposal cells. Also, this ROD discusses both the general approach and how the phased approach will be implemented for the ICDF.

Comment 187 : A Commentor wanted to know why is the area near INTEC selected as the proposed location, as opposed to another location on the INEEL? What administrative and engineering controls would be utilized to prevent possible future contamination of the Snake River Aquifer, and how would you know if that contamination originated from the new disposal facility or existing sources of contamination underneath or near the INTEC. [MS-W]

**Response:** This ROD is dealing with contaminated soils and debris from INTEC. An evaluation was performed concerning the use of a centralized disposal facility for dealing with all INEEL CERCLA soils and debris. This evaluation is presented in the FSS Report. The largest volume of contaminated soil and debris are located at INTEC. Based on this, an area at INTEC was selected for the disposal facility. In addition, there was a desire to limit the location of the ICDF to areas that have already been contaminated from past practices at the INEEL. The disposal facility will be engineered to prevent unacceptable impacts on the SRPA. From the engineering (design) work, the waste acceptance criteria would be developed. Administrative controls would be implemented to ensure that the waste disposed in the facility would be within the acceptance criteria. A monitoring network will be developed for the disposal facility to monitor contaminant migration directly beneath the disposal facility. In addition, monitoring would be conducted upgradient of the disposal facility. This would allow for determining whether the contamination is from the disposal facility or from the INTEC area.

Comment 188 : A Commentor want to know why is the area near INTEC selected as the proposed location, as opposed to another location on the INEEL? What administrative and engineering controls would be utilized to prevent possible future contamination of the Snake River Aquifer, and how would you know if that contamination originated from the new disposal facility or existing sources of contamination underneath or near the INTEC. [MS-W]

**Response:** This ROD is dealing with contaminated soils and debris from INTEC. An evaluation was performed concerning the use of a centralized disposal facility for dealing with all INEEL CERCLA soils and debris. This evaluation is presented in the FSS Report. The largest amount of contaminated soil and debris are located at INTEC. Based on this, an area at INTEC was selected for the disposal facility. In addition, there was a desire to limit the location of the ICDF to areas that have already been contaminated from past practices at the INEEL. The disposal facility will be engineered to prevent unacceptable impacts on the SRPA. From the engineering (design) work, the waste acceptance criteria would be developed. Administrative controls would be implemented to ensure that the waste disposed in the facility would be within the acceptance criteria. A monitoring network will be developed for the disposal facility to monitor contaminant migration directly beneath the disposal facility. In addition, monitoring would be conducted upgradient of the disposal facility. This would allow for determining whether the contamination is from the disposal facility or from the INTEC area.

Comment 189 : A Commentor wanted the Agencies to describe the types of waste that you anticipate would be disposed in this cell, and what types would need to be sent to off site facilities. Also, what is your estimate of the hazard to workers as a result of operating this facility? What is the cost comparison for on site disposal versus off site disposal at a commercial facility or other off site facility; and finally, are you accepting waste from off the INEEL for disposal at this facility? [MS-W]

**Response:** Waste material generated as a result of INEEL CERCLA projects are being considered as candidate material for disposal. This includes both contaminated soils and debris. Appendix C of the FSS Report (DOE/ID-10619) discusses the waste considered for disposal. Within the candidate materials are wastes that preliminarily are categorized as hazardous, low-level radioactive, mixed low-level

radioactive waste. Only waste that meets the acceptance criteria would be disposed in the disposal cells. Materials not meeting the acceptance criteria would require other disposal facilities, generally off-site. Hazards to workers implementing the operation of the disposal facility would be controlled to be within the applicable radiation (DOE Orders) and non-radiation (OSHA) standards. In the evaluation of alternatives, both on-site and off-site disposal were considered as alternatives. The cost of off-site disposal was estimated to cost approximately 3 times as much (\$477 million additional) for off-site disposal at a commercial disposal facility for all candidate materials. For the waste material considered in OU 3-13, the cost of off-site was estimated to cost approximately 3 times as much (\$154 million additional) for off-site disposal at a commercial disposal facility. Evaluation of the cost of disposal at an off-site DOE facility, such as the Nevada Test Site, was not conducted. However, a major cost component for off-site is disposal is the transportation costs associated with transporting the waste to the off-site disposal facility. As such, the cost of disposal at another DOE facility would be much greater than disposal in the new on-site disposal facility. No waste from off the INEEL will be considered for disposal in the ICDF.

Comment 190 : A Commentor wanted to express concern over the plans for a radioactive waste disposal site above the SRPA. I am totally opposed to this plan because of the potential environmental damage it could do and the health hazards it may generate. [BR-W]

**Response:** Protection of the SRPA is of major importance. The ICDF can be designed, constructed, operated, and closed while remaining protective of the SRPA. Limits will be place on materials that are acceptable for disposal in the ICDF. Waste materials (soils and debris) from INEEL CERCLA projects meeting the acceptance criteria would be candidate materials for disposal in the ICDF. If treatment is necessary to meet the acceptance criteria, the waste would be treated prior to disposal. For waste that cannot meet the acceptance criteria (with treatment), off-site disposal would be utilized.

Comment 191 : A Commentor wanted to know why can't the waste proposed to be sent to the ICDF be sent instead to the RWMC? Does it have to do, specifically, with (a) cost? Or (b) concentration? Or (c) specific contaminants contained (how could they be less dangerous at ICDF than at RWMC?) Or (d) RWMC capacity? Doesn't RWMC have capacity for more waste? [U-W]

**Response:** Some of the waste anticipated to be disposed of at the ICDF could be disposed at the RWMC. However, much of the waste volume considered for ICDF has RCRA issues (listed or potentially characteristic). The RWMC is not designed to meet RCRA Subtitle C standards, or permitted to accept listed hazardous waste. Also, the RWMC will be closing prior to completion of the remedial actions generating the waste considered for the ICDF. The RCRA issue is being dealt with for ICDF by the design being a facility meeting, or exceeding, the RCRA Subtitle C minimum technical requirements. The cost of packaging LLW without disposal at the RWMC is greater than the total cost of disposal at the ICDF. The waste acceptance criteria will be determined during remedial design. Once the design is completed, the waste acceptance criteria may be developed and fate and transport modeling will be conducted to ensure that ARARs are met and that the facility will not result in exceeding drinking water standards at the SRPA, or a 1 in 10,000 excess cancer risks, whichever is more stringent.

Comment 192 : A Commentor asked, if the ICDF (as presented here, a plan so vague and unprotective it can be most succinctly described as a crazy idea) isn't built, will the Group 3 waste (and other WAG 3 waste, and other INEEL waste) be sent to the RWMC? If not, why not, exactly? Wouldn't the cost of storage at RWMC be cheaper than transporting to a commercial off-site facility and paying their fee? [U-W]

**Response:** The ICDF has been selected as the remedial action for Group 3. If the ICDF had not been selected, some waste, including some WAG 3 wastes, could potentially be disposed of at the RWMC,

provided that the waste meets the acceptance criteria. Waste with RCRA issues (listed or characteristic) **cannot** be disposed of at the RWMC.

### **C.3.3.1 ICDF General Comments**

Comment 193 : A Commentor felt that there remain major uncertainties related to the siting location of the ICDF and the waste acceptance criteria. [CB-W]

**Response:** The ICDF will be designed and constructed to be protective for the SRPA and surface receptors. Additionally the facility will be designed to meet, or exceed, the Minimum Technical Requirements (MTRs) for a RCRA Subtitle C hazardous waste landfill. Materials being disposed of in the ICDF will be required to meet the WAC, which will be developed to be protective of the SRPA for both short and long-term impacts. Part of the remedial design activities will involve the siting of the disposal cells in the selected ICDF area. The site selection activities will consider relevant technical, regulatory, and financial factors. Based on these criteria, the best location(s) will be selected for the disposal cells in the ICDF area. The waste acceptance criteria will be finalized following the remedial design and may result in limits of disposal activities and masses or may require pretreatment of selected wastes prior to disposal.

Comment 194 : A Commentor stated, "Obviously, one of the more important things within the current plan that is a departure from the draft is a commitment to construct the subtitle C RCRA compliant ICDF. That is a major step forward, and we're very encouraged by that." [CB-TM]

**Response:** An evaluation of whether the wastes are subject to RCRA Subtitle C was made in the FSS Report, which is part of the Administrative Record. It was determined that there was a significant amount of INEEL CERCLA soils and debris having contaminants other than and in addition to radionuclides. Management of the non-radionuclides is subject to the RCRA requirements. Based on this, it was decided that a facility that would be compliant with the RCRA Subtitle C requirements would be needed to manage and dispose of the soil and debris wastes. With this information and analysis, the construction of a disposal facility compliant with RCRA Subtitle C requirements became the preferred alternative.

Comment 195 : A Commentor noted that under the Plan's off-site disposal alternative, only about 2.2 million cubic feet of generally homogeneous soil wastes would require burial. Leveraging this much smaller burial need to justify building 13 million cubic feet of disposal capacity for an unspecified mix of heterogeneous wastes from multiple locations is particularly imprudent, given the high value groundwater resource placed at risk. [L-W]

**Response:** The 2.2 M ft<sup>3</sup> referred to by the Commentor relates to WAG 3 soils only. If no other soils except WAG 3 soils were disposed of at the ICDF, it would still be cost effective to do this consolidation. This conclusion is supported by information available in the Administrative Record. Consolidation improves our ability to retain administrative controls over one large area versus numerous smaller areas resulting in economies for small and large volumes.

Comment 196 : One Commentor recommended that we reject the currently preferred alternative of building a new disposal facility at Chem Plant or other location overlying the SRPA. A commercial radioactive waste disposal facility could not be licensed here, and the government should not adopt a lower standard for protection of this vulnerable, high-value natural resource. If necessary, excavated wastes can be stored pending identification of a permanent sound solution. [L-W]

**Response:** Based on our evaluation the most cost effective solution which is protective of the aquifer is Alternative 4a (ICDF), based on the design requirements and stringent waste acceptance criteria that will be applied for this action. Given the type of waste that will be accepted by the ICDF, we see no impediments to a privatized mixed low-level facility at this location in compliance with state and federal siting and design laws if in the future a new facility is needed for other waste disposal.

Comment 197 : A Commentor wanted to know exactly which other release sites at INEEL might be allowed to dispose of material at the ICDF, and what type of contaminants and media might be disposed from these other sites? [U-W]

**Response:** This ROD has selected an on-site disposal facility for WAG 3. Future Records of Decision may specify on-site disposal as the selected remedy and the ICDF will be expanded as necessary. The ICDF will be constructed to dispose of both soils and debris. Potential candidate materials along with waste type are found in Appendix C of the FSS Report.

### C.3.3.2. ICDF Siting

Comment 198 : A Commentor remarked that dumping the waste on top of the ground and mounding the cover over it will result in the cap eroding over the long-term which again is unacceptable. DOE must designate another location for the ICDF that is not near a flood plain and preferably not over the aquifer. DOE's own study has identified at least two such sites where the Lemi Range meets the Snake River Plain [CB-W]

**Response:** Waste will not be placed into the ICDF by placing the waste on the ground and then mounding over the waste. The ICDF will consist of disposal cells where waste will be disposed and traceability of wastes will be maintained. Following filling of a disposal cell, the cell will be closed by constructing an engineered containment barrier (Cap) over the cell, which would be designed to control erosion, infiltration, and intrusion. The proposed location of the ICDF is not within the floodplain. A siting evaluation was conducted as part of this ROD to identify the best on-site location for the ICDF. This evaluation looked at siting criteria developed for solid waste, hazardous waste, PCB waste and LLW landfills. The two locations identified in a previous study, which are not over the SRPA on the INEEL, have other problems (near fault lines, on the side of a mountain, etc.), making them unsuitable. In addition to location, the ICDF will be designed, constructed, and operated to maintain protection of the SRPA.

Comment 199 : A Commentor was concerned that water sample data at the ICPP already showed massive migration of pollution into the groundwater and that the choice to locate it at the ICPP was misguided. [CB-W]

**Response:** There is a contaminated groundwater plume beneath the INTEC (ICPP), which was primarily a result of the use of an injection well, which introduced contaminants directly into the SRPA. Use of the injection well was discontinued in 1986 and the injection well was permanently closed using a pressured grouting technique in 1989. Restoring the aquifer to drinking water quality will be addressed by the Group 5 (Snake River Plain Aquifer) remedial alternative. The potential impact to the SRPA from the ICDF is dependent upon the design, construction, operation, and closure of the landfill. In addition, the ICDF will be restricted in both the types of contaminants and wastes that it can accept. As a result, we feel that construction of the ICDF at INTEC is an appropriate location.

Comment 200 : A Commentor stated that given the type of hydrogeologic environment, it would be impossible to meet the established federal requirements under the NRC 10 CFR, part 61, regulations governing commercial disposal of low-level radioactive waste on INEEL. [SR-TB]

**Response:** Unfortunately, we must disagree with the Commentor and apologize for the length of our response. However, this is a very important concern to the Agencies and deserves a detailed response. Under 10 CFR 61, a disposal facility can be constructed at INEEL over a sole source aquifer, provided it meets the criteria in the regulation. Although 10 CFR 61 is not considered an ARAR for this project, we have considered the substantive requirements in developing our siting evaluation. The relevant sections concerning siting criteria are contained in Subpart D (10 CFR 61.50), under which there are 11 criteria that must be satisfied. The criteria and how the ICDF will meet the criteria are discussed below.

Criteria 1: "...site suitability is given to isolation of waste, a matter having long-term impacts, and to disposal site features that ensure that the long-term performance objectives ... are met ..." As the ICDF will be designed, constructed, operated, and closed to not adversely impact the environment (SRPA and surface receptors) this criterion is satisfied. Both short and long-term impacts are being considered.

Criteria 2: "site shall be capable of being characterized, modeled, analyzed, and monitored." In conducting the RI/FS, the site was characterized, modeled, and analyzed. Additional characterization, modeling, and analysis will be conducted during the remedial design and development of the waste acceptance criteria. Monitoring of the site is a part of the operation and long-term management of the site.

Criteria 3: "... site should be selected so that projected population growth and future developments are not likely to affect the ability to meet the performance objectives ..." The proposed location for the ICDF is not currently near a residential or non-governmental industrial population and is located in an area of existing contamination (i.e., CPP-95).

Criteria 4: "Areas must be avoided having known natural resources which, if exploited, would result in failure to meet the performance objectives ..." The area of the ICDF will be controlled and restricted. In addition, the impacts on the aquifer will be minimized to not adversely impact the aquifer. There are **no** known natural resources that, if exploited, would impact the ability of the ICDF to meet this performance objectives.

Criteria 5: "... site must generally be well drained and free of areas of flooding or frequent ponding. Waste disposal shall not take place in a 100-year floodplain ..." The proposed area is not located within the 100-year floodplain. Also, the proposed area is not subject to flooding or ponding of water. In addition, the facility will be designed, constructed, operated, and closed, to minimize and mitigate the future impacts of potential flooding and ponding.

Criteria 6: "Upstream drainage areas must be minimized to decrease the amount of runoff which could erode or inundate waste disposal units." The proposed location is not near an upstream drainage area. In addition, the facility will be designed, constructed, operated, and closed, to minimize and mitigate the erosion and inundation of the disposal cells.

Criteria 7: "... site must provide sufficient depth to the water table that ground water intrusion, perennial or otherwise, into the waste will not occur." The depth of groundwater in the proposed area is approximately 460 feet below ground surface. Further, the location chosen is not inundated with perched water so no ground water intrusion into the waste fill will occur.

Criteria 8: "... hydrogeologic unit used for disposal shall not discharge groundwater to the surface within the disposal site." The proposed area currently has a discharge of groundwater near the proposed ICDF area (INTEC percolation ponds). However, as part of this ROD, these discharges will be discontinued prior to start of ICDF land filling operations. An alternate disposal system for the percolation ponds will be constructed, which will not impact the ICDF or perched water areas. In

addition, the facility will be designed, constructed, operated, and closed, to prevent the discharge of groundwater to the surface within the disposal site area.

Criteria 9: "Areas must be avoided where tectonic processes such as faulting, folding, seismic activity, or vulcanism may occur with such frequency and extent to significantly affect the ability to meet the performance objectives ..." The proposed location for the ICDF is not near faults, folds, or other seismic and vulcanism areas that would occur with sufficient frequency or extent to impact the ability of the ICDF to meet the performance objectives.

Criteria 10: "Areas must be avoided where surface geological processes such as mass wasting, erosion, slumping, landsliding, or weathering occurs with such frequency and extent to significantly affect the ability to meet the performance objectives ..." The proposed area for the ICDF is a relatively flat area which is not subject to mass wasting, slumping, or landslides. For the ICDF, only the engineered containment structure (cap) is proposed to be above ground level and subject erosion or weathering. The facility would be designed, constructed, operated, and closed, to minimize and mitigate the effects of erosion and weathering to allow the ICDF to meet the performance objectives.

Criteria 11: "site must not be located where nearby facilities or activities could adversely impact the ability of the site to meet the performance objectives ... or significantly mask the environmental monitoring program." Activities at the INTEC facility will not impact the ability of the ICDF to meet its performance objectives. In fact, the location of the ICDF facilitates the cleanup and consolidation of contaminated soils and debris within the INTEC facility thus promoting continued use of INTEC.

Based on the above discussion, the Agencies believe that the ICDF will be able to meet the requirements of 10 CFR 61 and will provide the same level of restriction and protection as a commercial facility would be required to demonstrate. The ICDF design, construction, operation, to include stringent WAC, and its closure will cost-effectively reduce the footprint of contaminated soils at INEEL, freeing up much of the land for future unrestricted development.

Comment 201 : A Commentor stated that the INEEL CERCLA disposal facility at the Chem Plant is recognizably within the 100-year flood plain and will be located below the surface so that the wastes will be at an elevation that is going to be vulnerable to flooding even within the 100-year scenario. [CB-TM]

**Response:** The engineered containment barriers (Caps) for the ICDF will be designed to control erosion against floodwaters. Also, the proposed location is not within the 100-year floodplain. Further, the facility will be lined and capped to isolate wastes and remain protective of the SRPA for both short and long-term impacts.

Comment 202 : A Commentor stated that he objected to the ICDF because of the potential for future erosion over the long term. Also, as the 100-year flood assumes 7,260 cubic feet per second in the Big Lost River and the 500-year flood assumes 9,680 cubic feet per second, which is 34 percent more, the idea of putting -- of locating, of siting the ICDF in that region made no sense at all. [CB-TM]

**Response:** In deciding where to most cost-effectively site the ICDF, the Agencies performed a siting evaluation which is summarized in the ROD. The majority of the wastes we anticipate disposing of in the ICDF are relatively short-lived radionuclides, like Cs-137 and Sr-90 contaminated soil and debris. The concentrations of these contaminants will decrease by over five orders of magnitude (~1/200,000) within approximately 500 years from the date of disposal. The engineered containment barriers will be designed to control erosion, infiltration, and intrusion. In addition, we will evaluate historic high water elevations and potential future climatic events in our design assumptions to minimize eventual landfill leachate generation.

Comment 203 : A Commentor stated that the logical thing, from their point of view, was to site the ICDF off the aquifer but on the INEEL real estate. He identified sites at the base of the Lemhi Range where the Lemhi kind of terminates at the Snake River plain, which is off of the aquifer and not in a flood plain. So I think there are other locations for that particular facility that need to be included. [CB-TM]

**Response:** We share the Commentor's concerns about the need to protect the valuable groundwater resource of the SRPA. This is the reason that we have elected to require that the aquifer be restored to drinking water standards within a timeframe that it may be needed for future consumption. The evaluation of on-Aquifer and off-Aquifer location for the facility was evaluated as was off-site commercial disposal. A primary reason that the ICDF is the selected alternative is the limitations we are placing on waste acceptable for disposal within this facility. The design and construction of the ICDF will further ensure that the landfill is conservatively designed so that leachate to the underlying sole source aquifer will never exceed drinking water standards. In addition, consolidation improves our ability to retain administrative controls over one large area versus numerous smaller areas. Concerning the Commentor's suggested location, there are several faults that surround the INEEL. In addition there are recharge zones for the SRPA that are not directly over the SRPA. Selection of the location for the ICDF considered a number of site selection criteria, including proximity to existing identified faults. This automatically ruled out locations near existing faults. Additional analysis concerning this issue was conducted for the new Three Mile Island Dry Storage Area.

Comment 204 : A Commentor remarked that the Proposed Plan called for construction of a new radioactive waste disposal facility overlying the SRPA, constructed near unlined radioactive liquid percolation ponds, which have already caused extensive contamination at the proposed location. [HC-W]

**Response:** Regarding the construction and location of the ICDF, an evaluation was conducted to determine the cost effectiveness of developing a centralized (consolidation) disposal facility for management of the INEEL CERCLA waste. This facility is to manage INEEL only CERCLA waste. There are contaminated soils, both dispersed and uncontained, throughout WAG 3 and other locations on the INEEL that present a risk to the SRPA due to less restrictive pathway in the current configuration. Based on this, contaminated soils at WAG 3 would require some type of remedial action to reduce an impact to the SRPA. As a result, remedial action alternatives, including the ICDF were developed and evaluated. For the ICDF alternative, the soils would be excavated and disposed of in a engineered disposal facility. The engineered facility, ICDF, would consist of RCRA compliant disposal cells, which include lined cells with leachate collection and significant groundwater monitoring systems designed to provide protection of the SRPA.

In the evaluation of the ICDF, the location that was selected is within the contaminated footprint of WAG 3. This has the effect of reducing, rather than expanding the overall contaminated footprint of the INEEL. The current percolation ponds at WAG 3 will be shut down. This will result in more protection to the underlying aquifer and will reduce public and environmental risk. Further, aquifer protection will be provided with required long term disposal cell, soil and groundwater monitoring which will signal any containment system failures and allow for additional remedies and/or corrective actions to be implemented to address the problem, if necessary.

Comment 205 : A Commentor stated that the SRPA is one of Idaho's crown jewels. This hugely productive "sole source" drinking water supply is also essential to the future of Idaho's agricultural economy. Experience has proven that the porous sand and gravel soils and fractured basalt geology overlying this world class water resource are insufficient protection against migrating chemical and radioactive contamination. Relying on man-made materials of potential unproven longevity to make up for unsuitable site conditions, as the Plan recommends, invites future environmental and economic problems. [HC-W]



**Response:** We share the Commentor's sentiment that the SRPA is one of Idaho's "crown jewels" and understand that this resource is of immense importance to the state's agricultural economy, as well as providing the sole source of drinking water to residents along the plain. We also wholeheartedly agree that activities at the INEEL must be protective of human health and the environment, and comply with all applicable environmental laws and regulations. The Commentor expresses concern regarding the level of protectiveness of current and proposed disposal practices for radioactive material at the INEEL. Stringent waste acceptance criteria will be developed as part of the remedial design process. Only wastes which do not pose a threat of exceeding Idaho drinking water standards in the underlying aquifer will be permitted to be disposed in the engineered landfill. WAG 3 CERCLA wastes that cannot be safely managed on INEEL will be disposed of in an off-site disposal facility in full compliance with state and federal laws and regulations. The materials of construction for the ICDF will in large part be naturally occurring materials (e.g., clays, sands, and gravels).

Comment 206 : A Commentor asked the DOE to work with the Environmental Protection Agency and the State of Idaho to revise the Proposed Plan by steering away from the development of radioactive waste disposal facilities over the SRPA. The Plan and all future INEEL cleanup actions should reflect off-aquifer disposal as the preferred alternative for final disposition of contaminated materials excavated at the site. [HC-W]

**Response:** Only wastes which do not pose a threat of exceeding drinking water standards in the underlying aquifer will be permitted to be disposed in the engineered landfill. The WAG 3 CERCLA wastes that cannot be safely managed on INEEL will, as the Commentor requests, be disposed of in an off-site disposal facility in full compliance with state and federal laws and regulations.

Comment 207 : A Commentor felt that the "off-aquifer" disposal alternatives both within and outside INEEL's boundaries have not received sufficient study. [L-W]

**Response:** We share the Commentor's concerns about the need to protect the valuable groundwater resource of the SRPA. The ICDF is actually a significant reduction in the footprint of contaminated soil at INEEL INTEC facility, which already presents an unacceptable risk to the aquifer if no further action is taken. The on-Aquifer and off-Aquifer locations for the proposed facility were evaluated as was off-site commercial disposal. A primary reason that the ICDF is the selected alternative is the limitation we are placing on waste acceptable for disposal within this facility. Unlike typical commercial disposal facilities which take a huge variety of waste types from many different generators, the ICDF is limited to only INEEL CERCLA waste streams which could be managed in place and be protective to the aquifer. A primary reason for consolidation is the efficiency and economy of scale presented through consolidation. Based on our projections substantial monies may be saved to further other necessary remedial actions at INEEL. Further, the design and construction of the ICDF will ensure that the landfill be conservatively managed so that leachate to the underlying sole source aquifer will never exceed drinking water standards. In addition, consolidation improves our ability to retain administrative controls over one large area versus numerous smaller areas.

Comment 208 : A Commentor was concerned with siting the ICDF, and quoted EPA guidance concerning not siting hazardous waste facilities in sensitive locations. [L-W]

**Response:** The sensitivity of a location is dependent upon many factors. The design, construction and operation of the ICDF will not pose an unacceptable threat to the "sole source aquifer." Stringent waste acceptance criteria will further ensure that this requirement be met.

Comment 209 : A Commentor referenced the Joint EPA-Nuclear Regulatory Commission siting guidelines for mixed waste disposal stating that hydrogeology is considered vulnerable when groundwater

travel time along a 100-foot flow path from the edge of engineered containment structure is less than 100 years. [L-W]

**Response:** Based on the groundwater modeling we performed in the RI/FS, and the types of contaminants (e.g., Cs-137) which will be disposed of at the ICDF, it may take thousands of years for selected contaminants to migrate to the SRPA, assuming no hydraulic barriers are in place. Further, the travel times to the underlying SRPA are significantly increased in an engineered structure like the ICDF, which will be designed to impede transport of contaminants.

Comment 210 : A Commentor stated that, "The underlying eastern SRPA, formally designated a sole source aquifer by EPA in 1991, provides water used at the site and is an important economic resource for southeastern and south central Idaho. More than 3,000 people draw water from wells located within a 3-mile radius of the site. According to the Plan, regional groundwater now velocities 5 ft./day, and generally flows even more rapidly beneath the Chem Plant." [L-W]

**Response:** INTEC is located in the central portion of the INEEL with the nearest site boundary approximately 8 miles away. Groundwater extracted at the INEEL is carefully monitored to ensure that the workers are not being exposed to unacceptable levels of contamination from the consumption of SRPA groundwater. In addition, there are no nonworker populations (such as towns or other communities) within 3 miles of INTEC. The extent of contamination at INEEL emanating from WAG 3 has been mapped and measured for over 30 years. Sensitive studies of CI-36 have shown the downgradient extent of the plume, which is measurable up to 8 miles from the INEEL border. No off-INEEL drinking water users, or potential users will be exposed to contaminant levels above drinking water standards. The action being taken under this ROD is to restore the aquifer underlying INEEL to drinking water standards, within a reasonable timeframe (i.e., 100 years).

Comment 211 : A Commentor stated that unforeseen releases would increase waste constituent concentrations in the area, resulting in drinking water standards being exceeded and further adverse effects from overlying perched water zones. The Commentor further stated that this circumstance could conflict with the NRC site suitability requirement that "disposal facility must not be located where nearby facilities could ... significantly mask environmental monitoring program." 10 CFR 61.50(a)(11) [L-W]

**Response:** The criteria referenced actually states: "The disposal site must not be located where nearby facilities or activities could adversely impact the ability of the site to meet the performance objectives ... or significantly mask the environmental monitoring program." The ICDF would be designed, constructed, operated, and closed, to not adversely impact the aquifer (SRPA) and surface receptors. For environmental monitoring, the monitoring system would be designed, constructed, operated, and maintained to determine the impacts on the aquifer from the ICDF. The actual design of both the disposal cells and monitoring network will be developed during the remedial design phase of the project.

Comment 212 : One Commentor recommended that we determine whether a technically suitable disposal location exists at the INEEL that is not underlain by the aquifer. If a suitable area exists, conduct health and environmental risk assessments and otherwise develop and evaluate this alternative on-site strategy. [L-W]

**Response:** Based on the waste that will be accepted; in addition to the design, construction, and operation of the ICDF; the Agencies are confident that the planned location is protective of human health, the environment. The Agencies are committed to keeping the public informed during the design and construction phase through the issuance of fact sheets and holding workshops, as appropriate.

Comment 213 : A Commentor remarked that pumping and treating the existing contaminated groundwater and perched water zones are challenging and expensive and this difficulty in performing corrective action should serve as a limitation in selecting a site above the SRPA. [L-W]

**Response:** We agree that cleanup of past releases to groundwater in the perched zones and SRPA are challenging and expensive. We appreciate that high cost of remediation to address the environmental decisions of the past. We must note, however, that the major source of groundwater contamination at the INTEC is from direct injection of hazardous and radioactive substances into the SRPA at the former injection well, not migration of contaminants from the shallow subsurface to the aquifer. However, given the potential difficulty in cleaning up the SRPA, the Agencies will consider the potential impacts of the ICDF on groundwater when selecting the site location and developing the final design. At a minimum, the Agencies plan to develop the ICDF to be protective and minimize potential exposures to either humans or the environment, including groundwater, for at least 1,000 years. The principal contaminants expected to be disposed in the ICDF include Cs-137 and Sr-90, which have relatively short half lives and will substantially decay before 1,000 years.

Comment 214 : A Commentor suggested that the desire to concentrate waste over an already contaminated portion of environmentally vulnerable, economically vital sole source” aquifer is compounded by Department's actions to accelerate waste receipt at the existing, Radioactive Management Complex Subsurface Disposal Area waste management program strategic plan. [L-W]

**Response:** We cannot emphasize enough that the ICDF is only for INEEL CERCLA cleanup waste disposal. These wastes already exist above the “sole source aquifer” and if not addressed will present a unacceptable risk if the INEEL land is developed for private use in the future. Stringent waste acceptance criteria will be developed as part of the remedial design process. Only wastes that do not pose a threat of exceeding drinking water standards in the underlying aquifer will be permitted to be disposed in the engineered landfill. WAG 3 CERCLA wastes that cannot be safely managed on INEEL will be disposed of in an off-site disposal facility in full compliance with state and federal laws and regulations

Comment 215 : The INEEL CAB recommended that use of clean areas to dispose of wastes be minimized to the extent possible. The Board restated its support in the past for using already contaminated areas as disposal sites for LLW. Use of clean areas is much less desirable. [CAB-W]

**Response:** Construction of the ICDF will occur in the area to the west of the existing INTEC percolation ponds. A siting study was completed resulting in the selected location for the ICDF area. Site CPP-95 is the contaminated area associated with releases from the main stack at INTEC. The area defined as the AOC will not be suitable for free release or unrestricted use for 100 years. This will require the area to be institutionally controlled with access and use restrictions and radiological surveillance. While the area selected for the ICDF does not encompass the entire existing percolation ponds area, the selected ICDF area is in a previously contaminated area requiring continued access restrictions.

Comment 216 : A Commentor asked that the WAG 3 AOC be shown on a map. [U-W]

**Response:** A map showing the WAG 3 OU 3-13 AOC is included in this ROD. The boundary extends south of the existing percolation ponds. The entire proposed ICDF area is located within the OU 3-13 AOC.